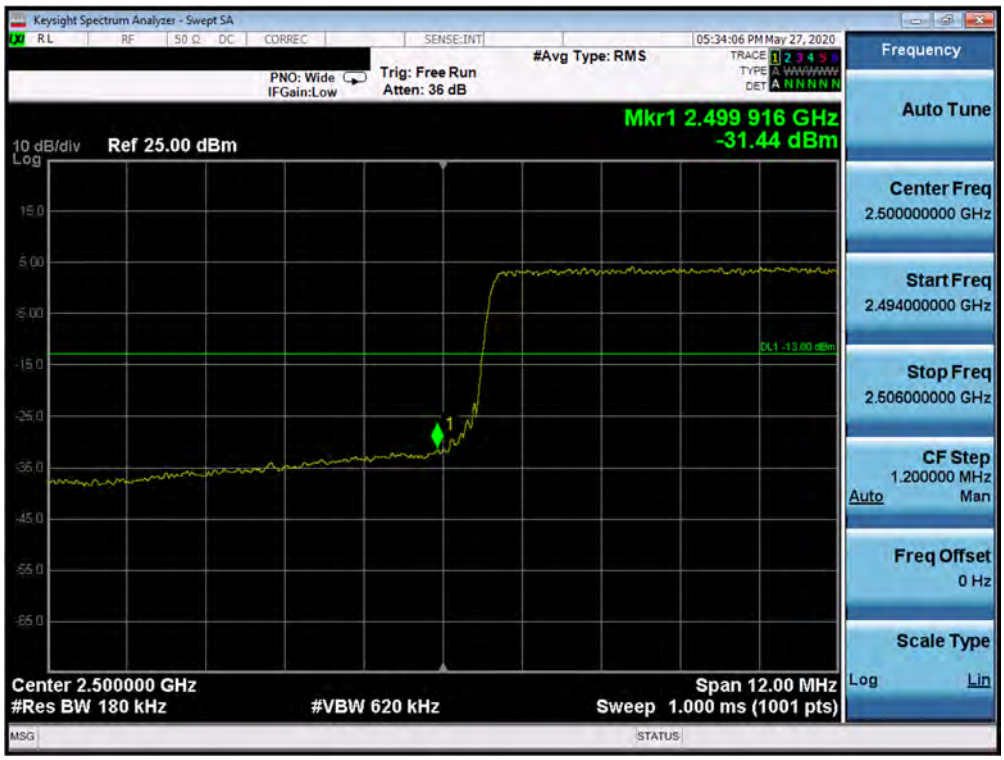
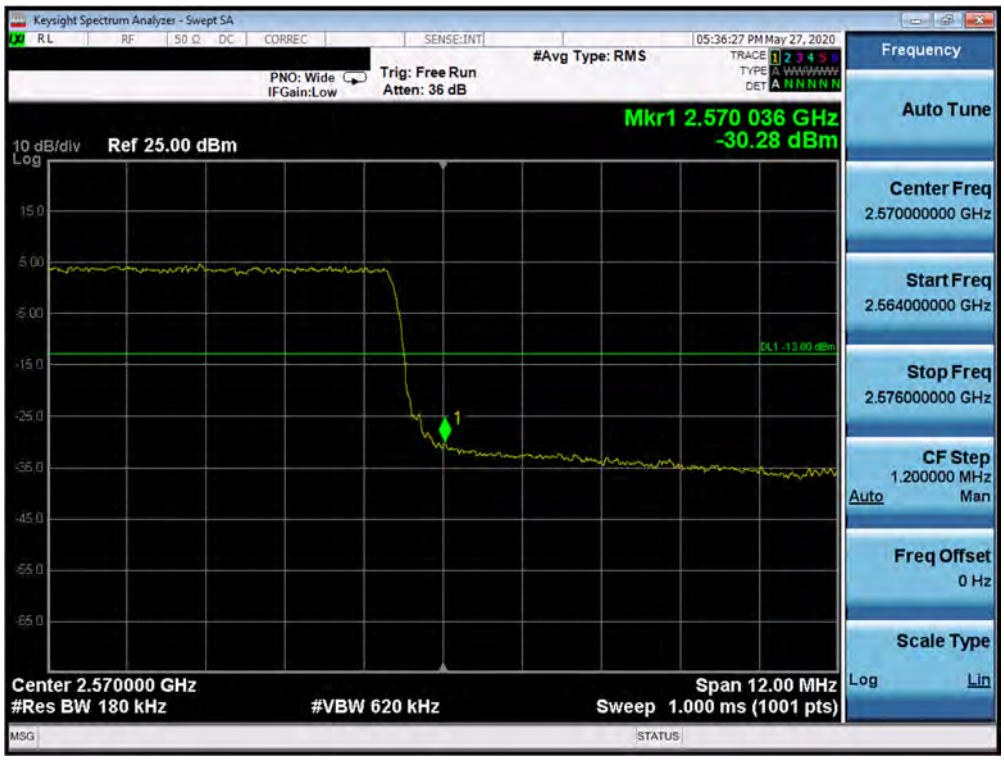


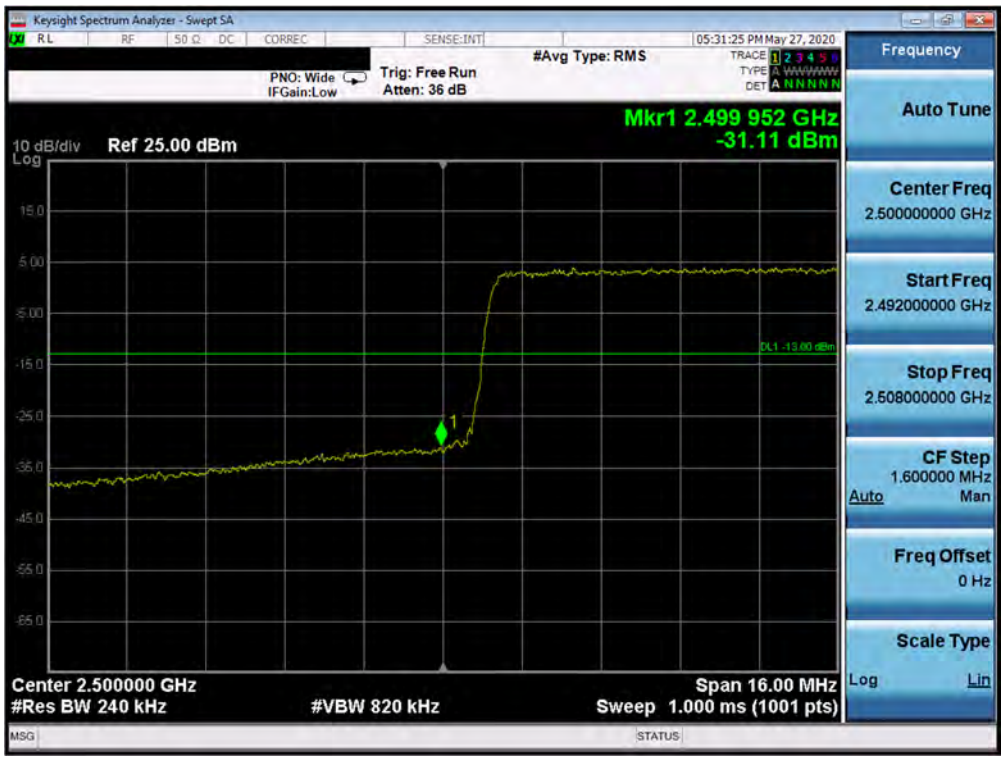
Plot 7-440. Lower Band Edge Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)

Plot 7-441. Lower Extended Band Edge Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-442. Upper Band Edge Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)

Plot 7-443. Upper Extended Band Edge Plot (Band 7 - 15.0MHz QPSK - Full RB Configuration)



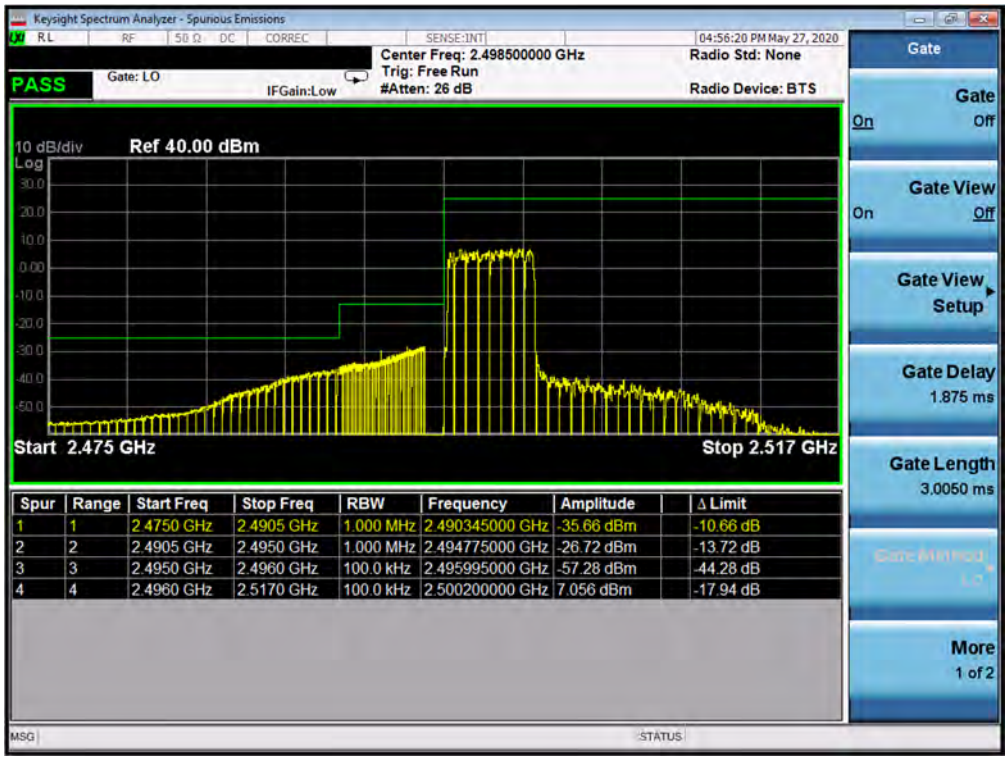
Plot 7-444. Lower Band Edge Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)

Plot 7-445. Lower Extended Band Edge Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)

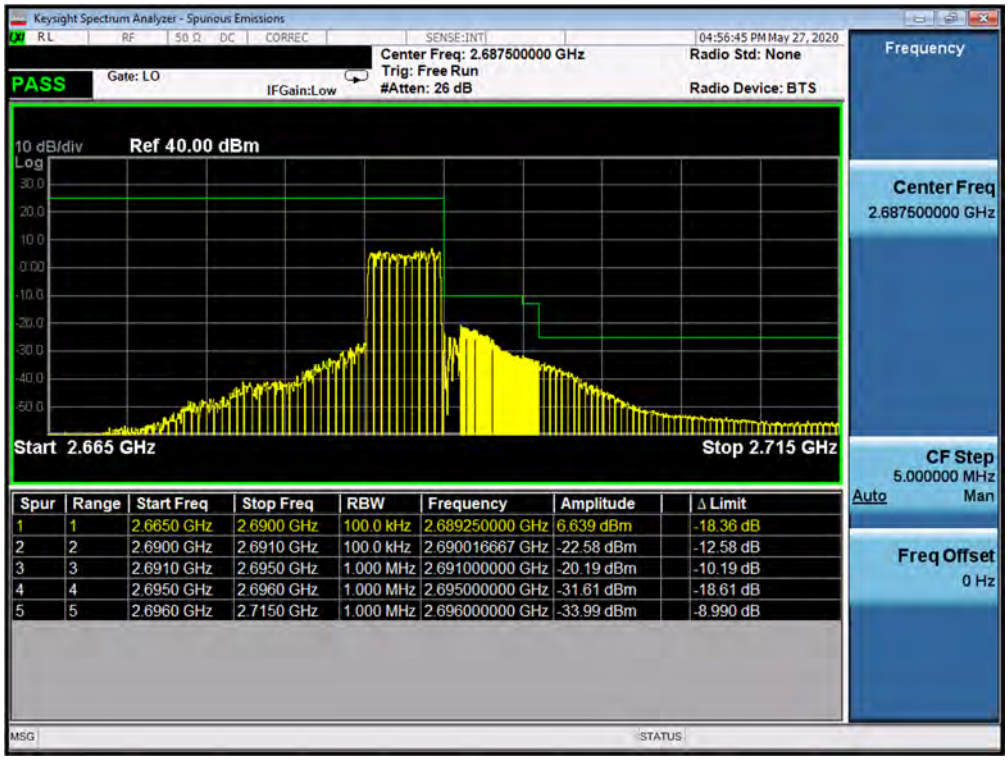
Plot 7-446. Upper Band Edge Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)

Plot 7-447. Upper Extended Band Edge Plot (Band 7 - 20.0MHz QPSK - Full RB Configuration)

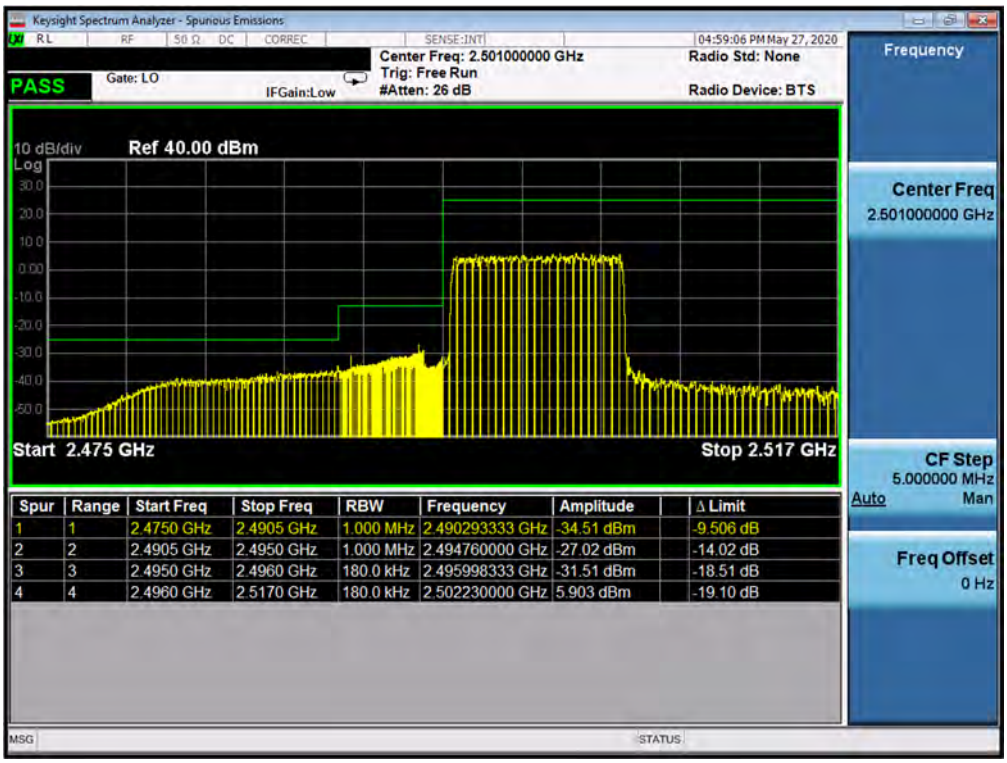
Band 41



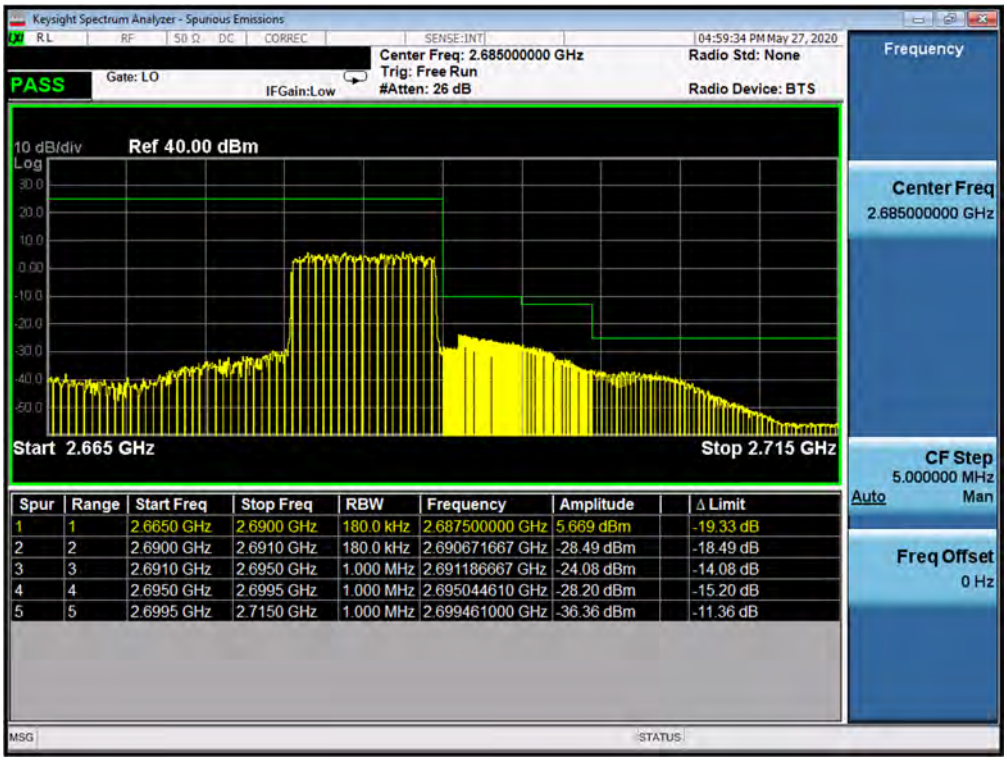
Plot 7-448. Lower ACP Plot at 2496 MHz (Band 41 - 5.0MHz QPSK - Full RB Configuration)



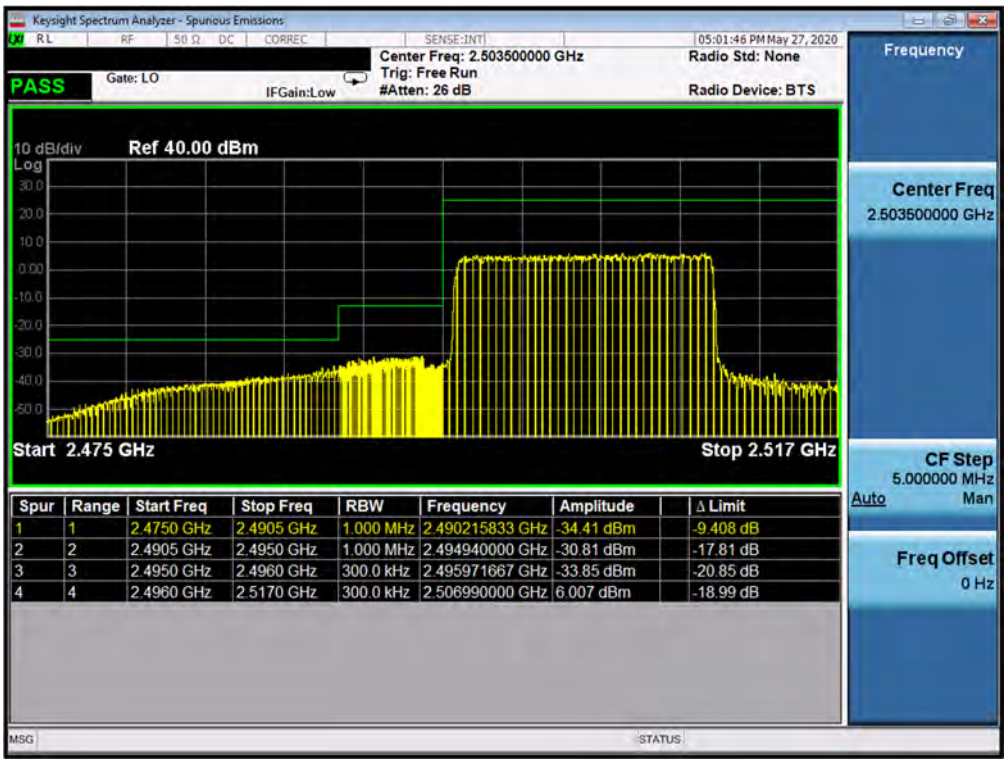
Plot 7-449. Upper ACP Plot (Band 41 - 5.0MHz QPSK - Full RB Configuration)



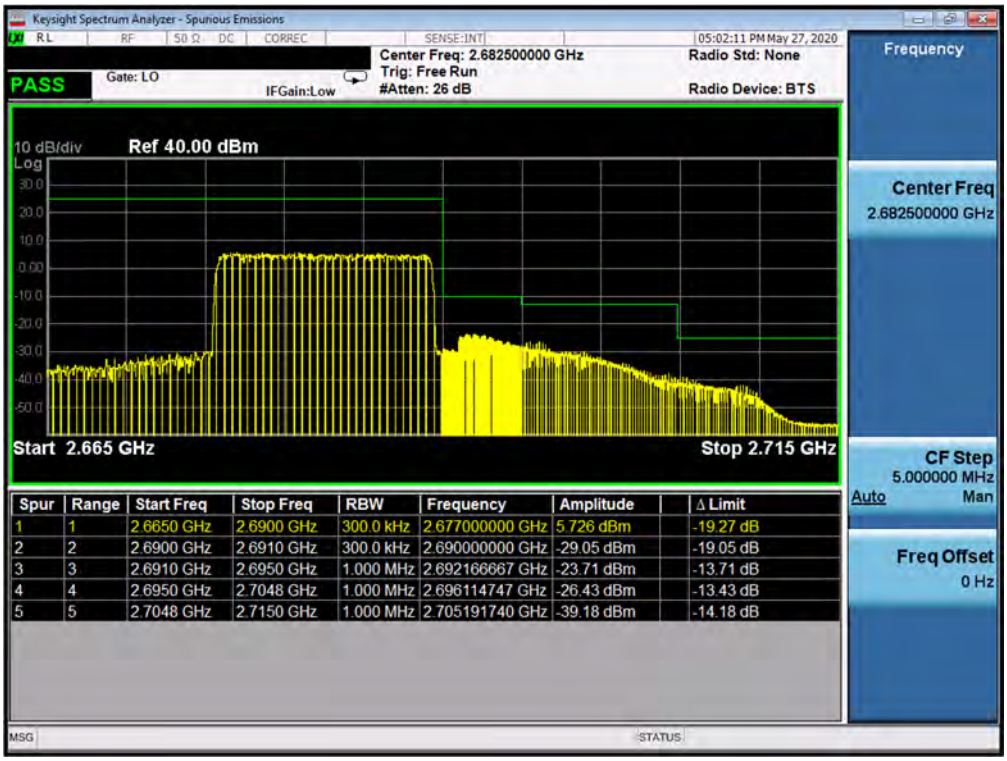
Plot 7-450. Lower ACP Plot at 2496 MHz (Band 41 - 10.0MHz QPSK - Full RB Configuration)



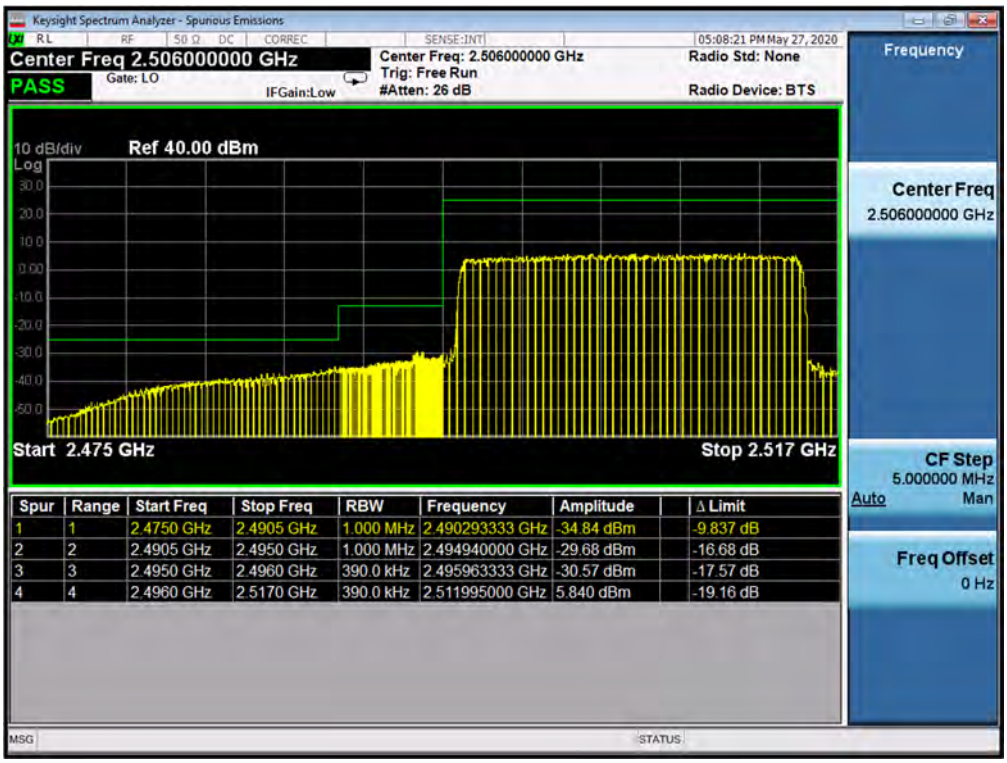
Plot 7-451. Upper ACP Plot (Band 41 - 10.0MHz QPSK - Full RB Configuration)



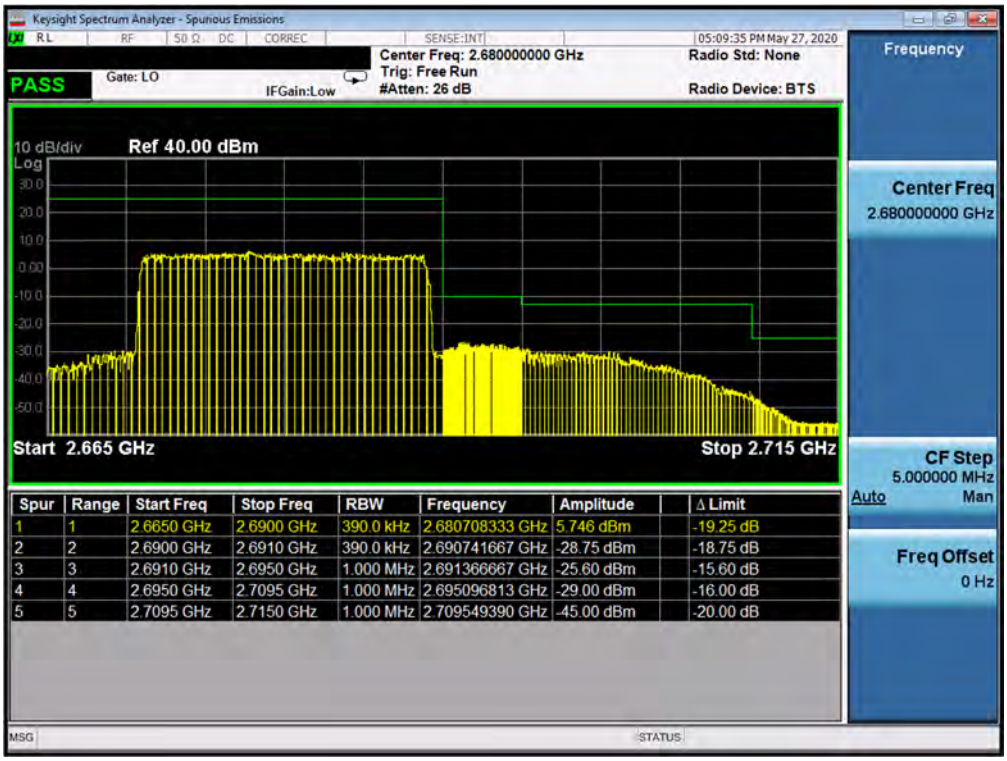
Plot 7-452. Lower ACP Plot at 2496 MHz (Band 41 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-453. Upper ACP Plot (Band 41 - 15.0MHz QPSK - Full RB Configuration)



Plot 7-454. Lower ACP Plot at 2496 MHz (Band 41 - 20.0MHz QPSK - Full RB Configuration)

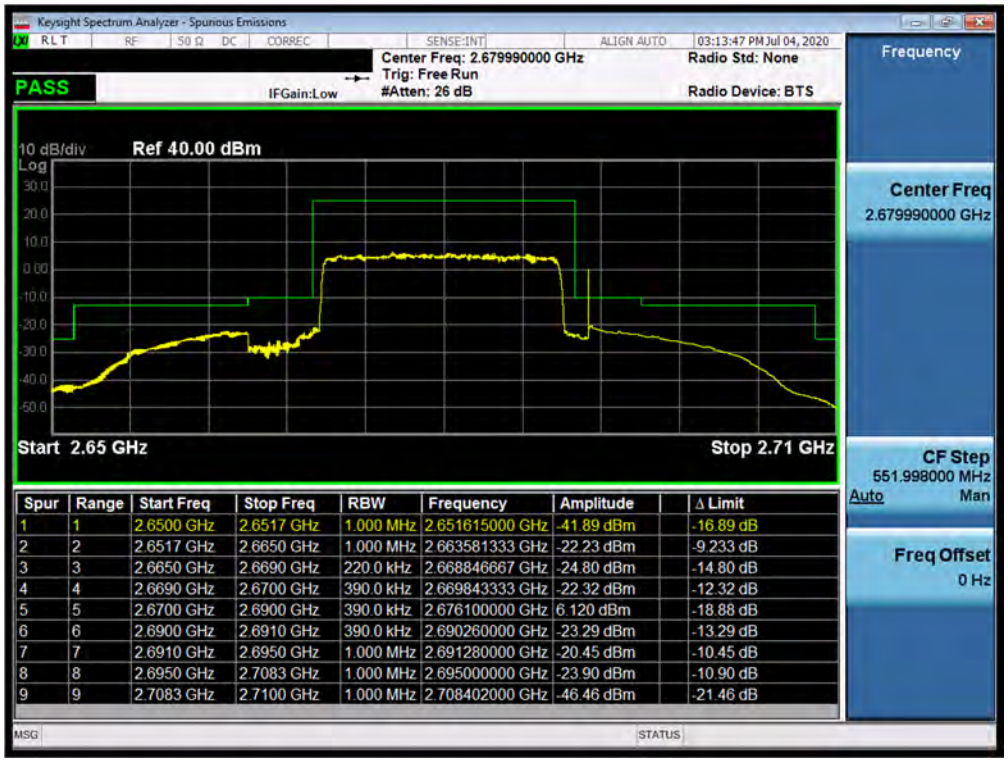


Plot 7-455. Upper ACP Plot (Band 41 - 20.0MHz QPSK - Full RB Configuration)

NR Band n41

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4760 GHz	2.4905 GHz	1.000 MHz	2.490475833 GHz	-27.92 dBm	-2.922 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494355000 GHz	-24.42 dBm	-11.42 dB
3	3	2.4950 GHz	2.4960 GHz	200.0 kHz	2.495993333 GHz	-29.52 dBm	-16.52 dB
4	4	2.4960 GHz	2.5160 GHz	390.0 kHz	2.506366667 GHz	5.888 dBm	-19.11 dB
5	5	2.5160 GHz	2.5170 GHz	390.0 kHz	2.516145000 GHz	-27.79 dBm	-17.79 dB
6	6	2.5170 GHz	2.5210 GHz	1.000 MHz	2.517000000 GHz	-24.95 dBm	-14.95 dB
7	7	2.5210 GHz	2.5343 GHz	1.000 MHz	2.521665000 GHz	-27.54 dBm	-14.54 dB
8	8	2.5343 GHz	2.5360 GHz	1.000 MHz	2.534946000 GHz	-41.85 dBm	-16.85 dB

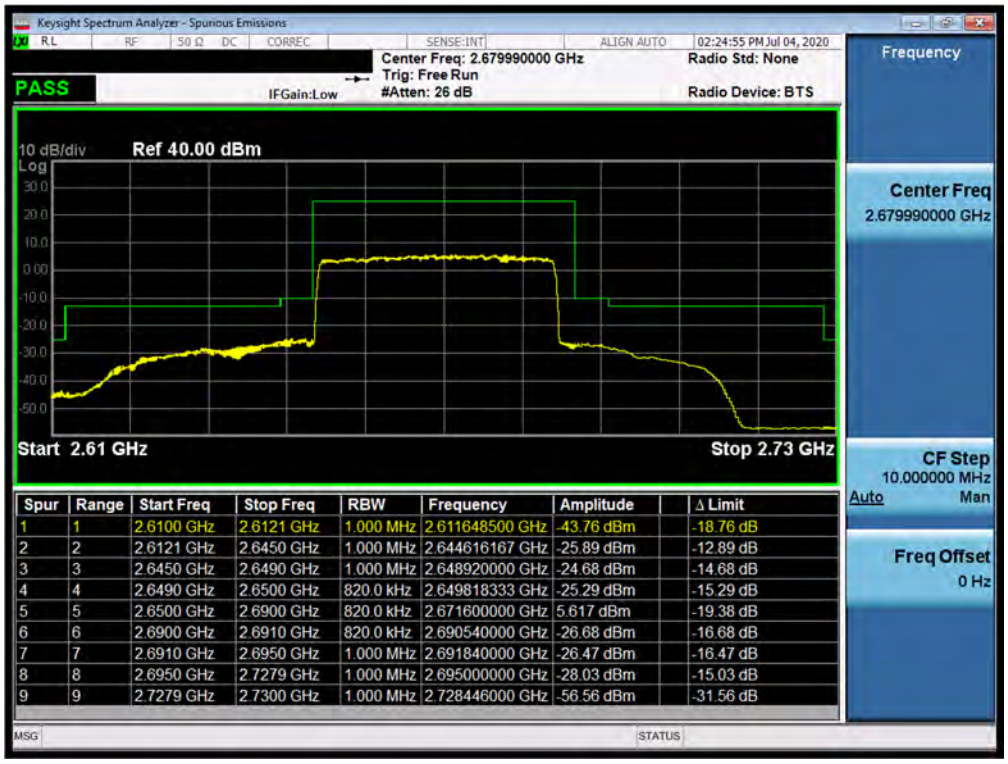
Plot 7-456. Lower ACP Plot at 2496 MHz (n41 - 20.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)



Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.6500 GHz	2.6517 GHz	1.000 MHz	2.651615000 GHz	-41.89 dBm	-16.89 dB
2	2	2.6517 GHz	2.6650 GHz	1.000 MHz	2.663581333 GHz	-22.23 dBm	-9.233 dB
3	3	2.6650 GHz	2.6690 GHz	220.0 kHz	2.668846667 GHz	-24.80 dBm	-14.80 dB
4	4	2.6690 GHz	2.6700 GHz	390.0 kHz	2.669843333 GHz	-22.32 dBm	-12.32 dB
5	5	2.6700 GHz	2.6900 GHz	390.0 kHz	2.676100000 GHz	6.120 dBm	-18.88 dB
6	6	2.6900 GHz	2.6910 GHz	390.0 kHz	2.690260000 GHz	-23.29 dBm	-13.29 dB
7	7	2.6910 GHz	2.6950 GHz	1.000 MHz	2.691280000 GHz	-20.45 dBm	-10.45 dB
8	8	2.6950 GHz	2.7083 GHz	1.000 MHz	2.695000000 GHz	-23.90 dBm	-10.90 dB
9	9	2.7083 GHz	2.7100 GHz	1.000 MHz	2.708402000 GHz	-46.46 dBm	-21.46 dB

Plot 7-457. Upper ACP Plot (Band 41 - 20.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

Plot 7-458. Lower ACP Plot at 2496 MHz (n41 - 40.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)



Plot 7-459. Upper ACP Plot (Band 41 - 40.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4460 GHz	2.4905 GHz	1.000 MHz	2.490425833 GHz	-29.79 dBm	-4.792 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494745000 GHz	-27.88 dBm	-14.88 dB
3	3	2.4950 GHz	2.4960 GHz	560.0 kHz	2.495990000 GHz	-29.63 dBm	-16.63 dB
4	4	2.4960 GHz	2.5460 GHz	1.000 MHz	2.519250000 GHz	1.700 dBm	-23.30 dB
5	5	2.5460 GHz	2.5510 GHz	1.000 MHz	2.546000000 GHz	-19.24 dBm	-9.240 dB
6	6	2.5510 GHz	2.5938 GHz	1.000 MHz	2.551000000 GHz	-27.98 dBm	-14.98 dB
7	7	2.5938 GHz	2.5960 GHz	1.000 MHz	2.593954000 GHz	-42.51 dBm	-17.51 dB

Plot 7-460. Lower ACP Plot at 2496 MHz (n41 - 50.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5900 GHz	2.5922 GHz	1.000 MHz	2.591206333 GHz	-45.39 dBm	-20.39 dB
2	2	2.5922 GHz	2.6350 GHz	1.000 MHz	2.634928667 GHz	-32.22 dBm	-19.22 dB
3	3	2.6350 GHz	2.6400 GHz	1.000 MHz	2.639975000 GHz	-30.87 dBm	-20.87 dB
4	4	2.6400 GHz	2.6900 GHz	1.000 MHz	2.663250000 GHz	0.515 dBm	-24.49 dB
5	5	2.6900 GHz	2.6950 GHz	1.000 MHz	2.690000000 GHz	-22.60 dBm	-12.60 dB
6	6	2.6950 GHz	2.7378 GHz	1.000 MHz	2.695000000 GHz	-33.71 dBm	-20.71 dB
7	7	2.7378 GHz	2.7400 GHz	1.000 MHz	2.738702000 GHz	-56.65 dBm	-31.65 dB

Plot 7-461. Upper ACP Plot (Band 41 - 50.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

Plot 7-462. Lower ACP Plot at 2496 MHz (n41 - 60.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

Plot 7-463. Upper ACP Plot (Band 41 - 60.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4160 GHz	2.4905 GHz	1.000 MHz	2.490500000 GHz	-32.97 dBm	-7.972 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494715000 GHz	-30.48 dBm	-17.48 dB
3	3	2.4950 GHz	2.4960 GHz	820.0 kHz	2.495465000 GHz	-31.07 dBm	-18.07 dB
4	4	2.4960 GHz	2.5760 GHz	1.000 MHz	2.534933333 GHz	-0.569 dBm	-25.57 dB
5	5	2.5760 GHz	2.5810 GHz	1.000 MHz	2.576008333 GHz	-16.66 dBm	-6.656 dB
6	6	2.5810 GHz	2.6541 GHz	1.000 MHz	2.581000000 GHz	-30.98 dBm	-17.98 dB
7	7	2.6541 GHz	2.6560 GHz	1.000 MHz	2.655088000 GHz	-46.48 dBm	-21.48 dB

Plot 7-464. Lower ACP Plot at 2496 MHz (n41 - 80.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5300 GHz	2.5319 GHz	1.000 MHz	2.531225500 GHz	-44.34 dBm	-19.34 dB
2	2	2.5319 GHz	2.6050 GHz	1.000 MHz	2.600126667 GHz	-31.78 dBm	-18.78 dB
3	3	2.6050 GHz	2.6100 GHz	1.000 MHz	2.609416667 GHz	-30.64 dBm	-20.64 dB
4	4	2.6100 GHz	2.6900 GHz	1.000 MHz	2.614266667 GHz	-2.143 dBm	-27.14 dB
5	5	2.6900 GHz	2.6950 GHz	1.000 MHz	2.690000000 GHz	-18.87 dBm	-8.871 dB
6	6	2.6950 GHz	2.7681 GHz	1.000 MHz	2.695000000 GHz	-35.19 dBm	-22.19 dB
7	7	2.7681 GHz	2.7700 GHz	1.000 MHz	2.769107000 GHz	-56.76 dBm	-31.76 dB

Plot 7-465. Upper ACP Plot (Band 41 - 80.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.4060 GHz	2.4905 GHz	1.000 MHz	2.490359167 GHz	-33.51 dBm	-8.514 dB
2	2	2.4905 GHz	2.4950 GHz	1.000 MHz	2.494272500 GHz	-30.38 dBm	-17.38 dB
3	3	2.4950 GHz	2.4960 GHz	910.0 kHz	2.495983333 GHz	-29.29 dBm	-16.29 dB
4	4	2.4960 GHz	2.5860 GHz	1.000 MHz	2.544750000 GHz	-1.293 dBm	-26.29 dB
5	5	2.5860 GHz	2.5910 GHz	1.000 MHz	2.586008333 GHz	-15.78 dBm	-5.779 dB
6	6	2.5910 GHz	2.6742 GHz	1.000 MHz	2.591000000 GHz	-32.46 dBm	-19.46 dB
7	7	2.6742 GHz	2.6760 GHz	1.000 MHz	2.674740000 GHz	-47.14 dBm	-22.14 dB

Plot 7-466. Lower ACP Plot at 2496 MHz (n41 - 90.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

Spur	Range	Start Freq	Stop Freq	RBW	Frequency	Amplitude	Δ Limit
1	1	2.5100 GHz	2.5118 GHz	1.000 MHz	2.510762000 GHz	-45.22 dBm	-20.22 dB
2	2	2.5118 GHz	2.5950 GHz	1.000 MHz	2.592642667 GHz	-32.84 dBm	-19.84 dB
3	3	2.5950 GHz	2.6000 GHz	1.000 MHz	2.599941667 GHz	-31.37 dBm	-21.37 dB
4	4	2.6000 GHz	2.6900 GHz	1.000 MHz	2.611850000 GHz	-2.250 dBm	-27.25 dB
5	5	2.6900 GHz	2.6950 GHz	1.000 MHz	2.690016667 GHz	-18.55 dBm	-8.554 dB
6	6	2.6950 GHz	2.7782 GHz	1.000 MHz	2.695000000 GHz	-37.69 dBm	-24.69 dB
7	7	2.7782 GHz	2.7800 GHz	1.000 MHz	2.779586000 GHz	-56.72 dBm	-31.72 dB

Plot 7-467. Upper ACP Plot (Band 41 - 90.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

Plot 7-468. Lower ACP Plot at 2496 MHz (n41 - 100.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

Plot 7-469. Upper ACP Plot (Band n41 - 100.0MHz DFT-s-OFDM-QPSK - Full RB Configuration)

7.5 Peak-Average Ratio

Test Overview

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

Test Procedure Used

KDB 971168 D01 v03r01 – Section 5.7.1

Test Settings

1. The signal analyzer's CCDF measurement profile is enabled
2. Frequency = carrier center frequency
3. Measurement BW ≥ OBW or specified reference bandwidth
4. The signal analyzer was set to collect one million samples to generate the CCDF curve
5. The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms.

Test Setup

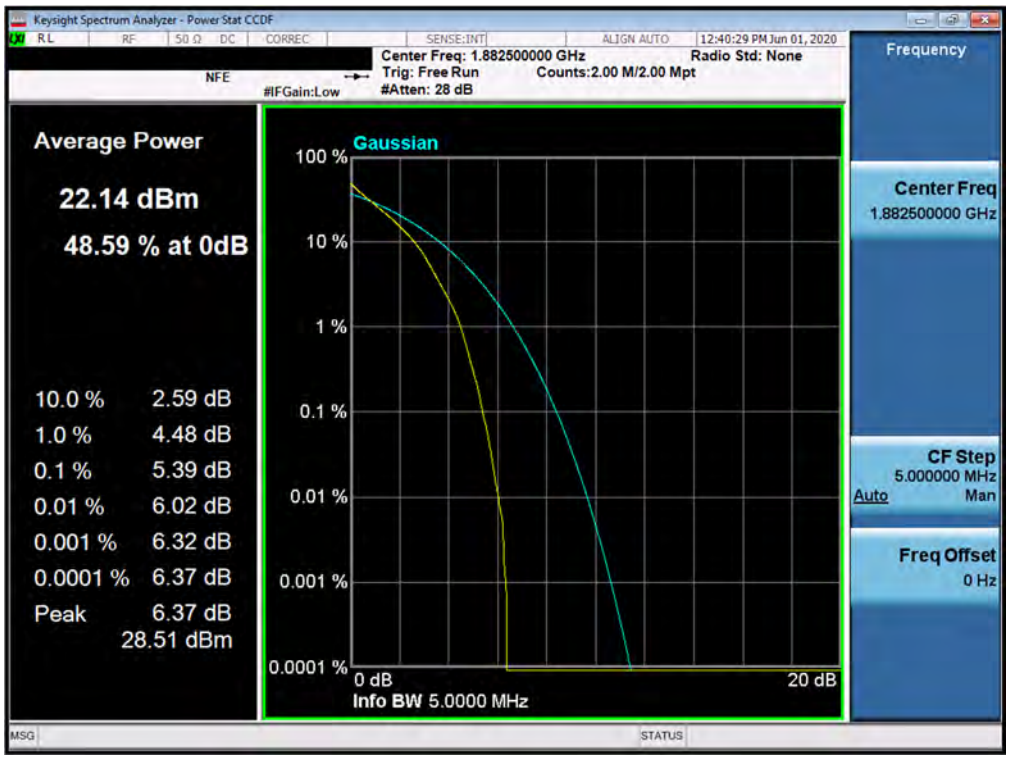
The EUT and measurement equipment were set up as shown in the diagram below.

Figure 7-4. Test Instrument & Measurement Setup

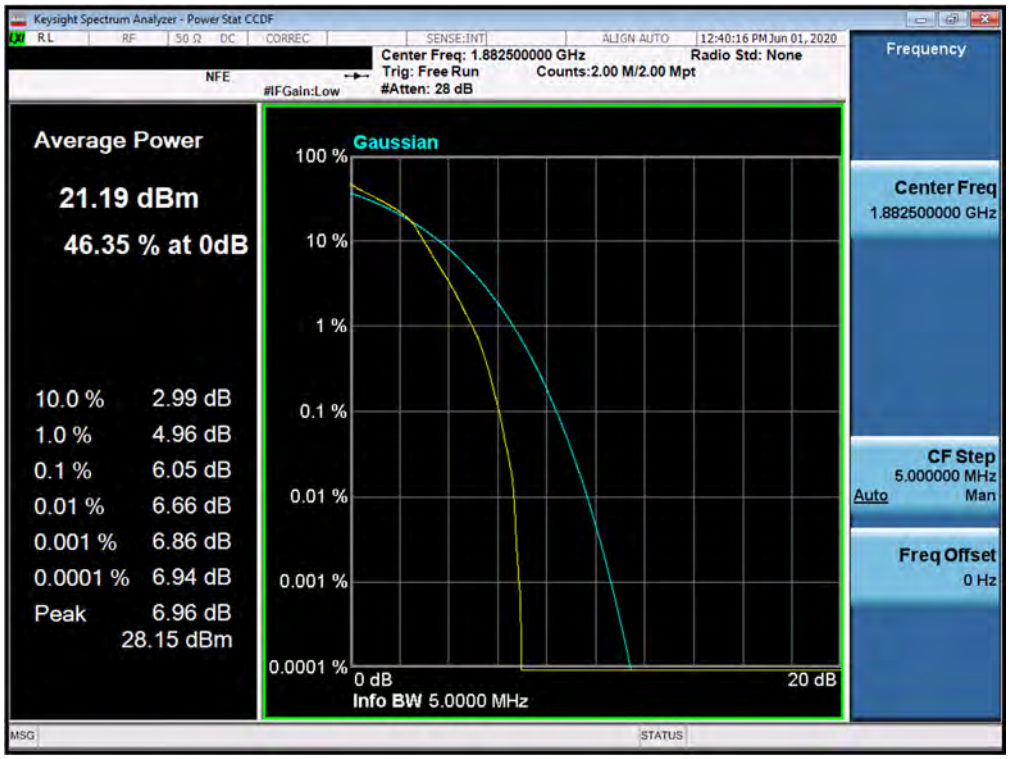
Test Notes

None.

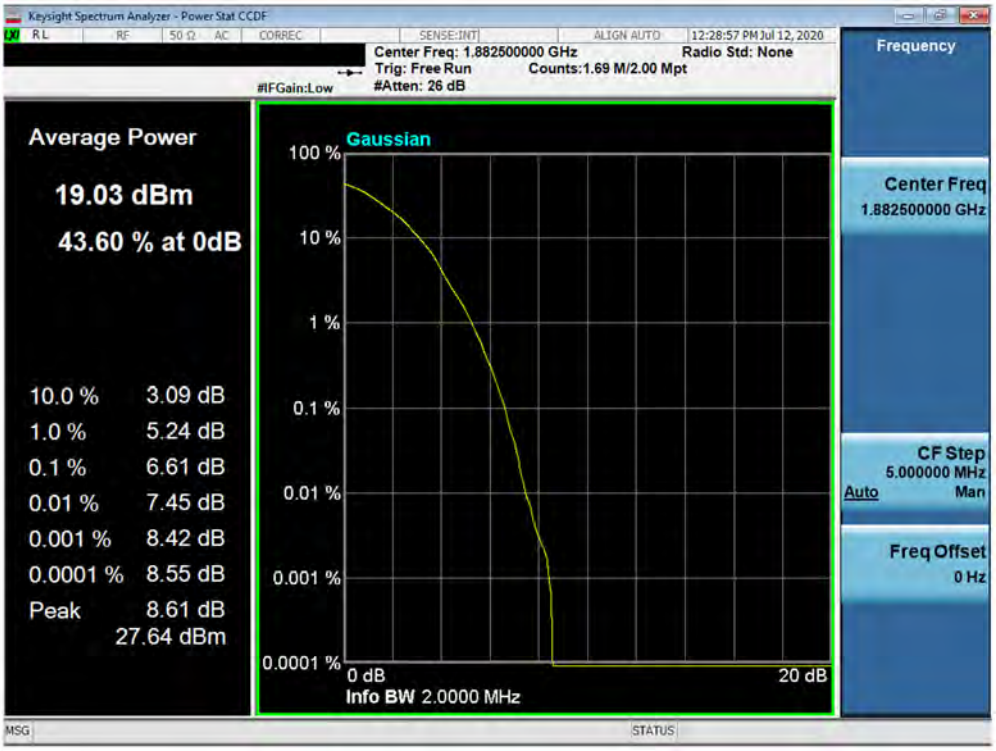
Band 25/2



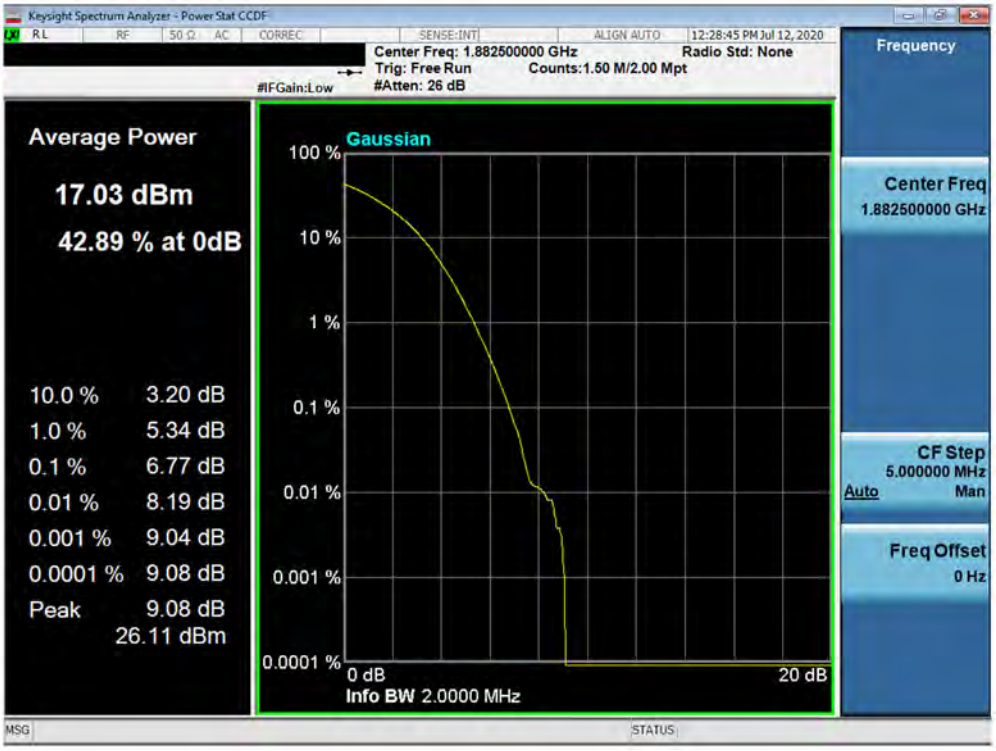
Plot 7-470. PAR Plot (Band 25/2 - 1.4MHz QPSK - Full RB Configuration)



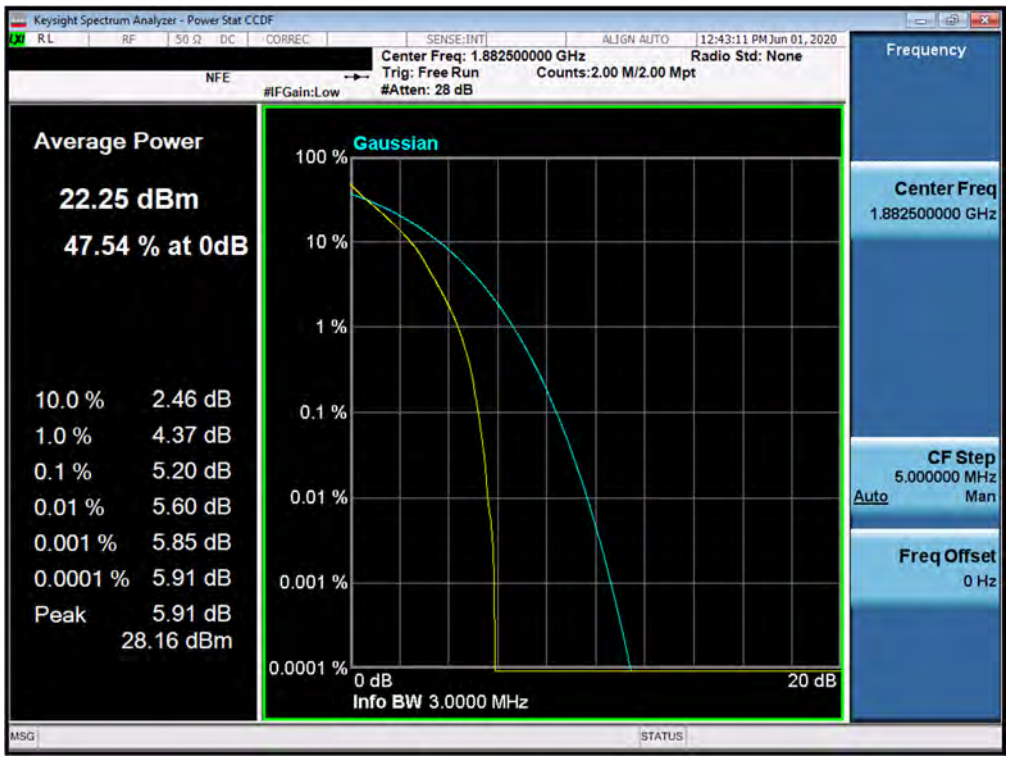
Plot 7-471. PAR Plot (Band 25/2 - 1.4MHz 16-QAM - Full RB Configuration)



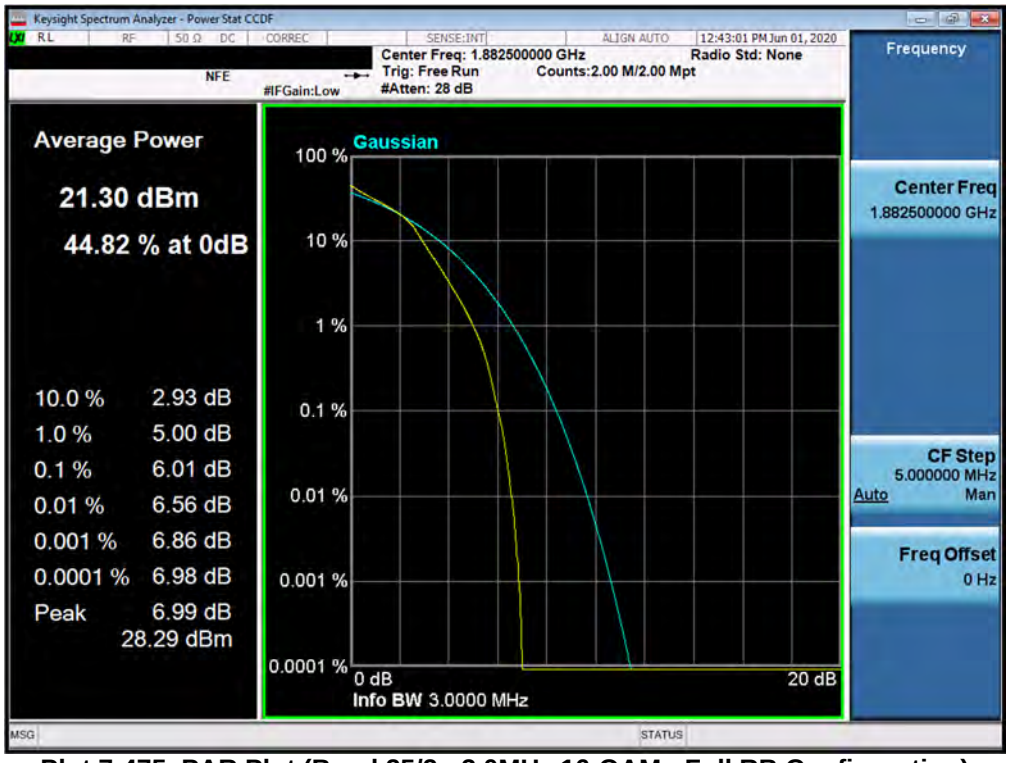
Plot 7-472. PAR Plot (Band 25/2 - 1.4MHz 64-QAM - Full RB Configuration)



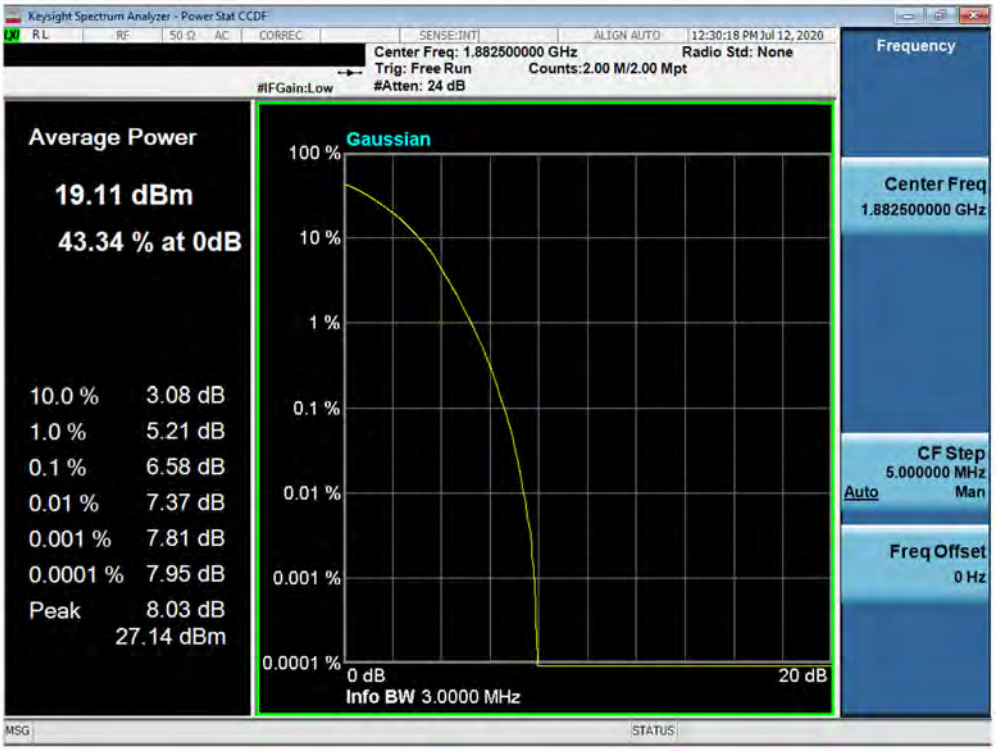
Plot 7-473. PAR Plot (Band 25/2 - 1.4MHz 256-QAM - Full RB Configuration)



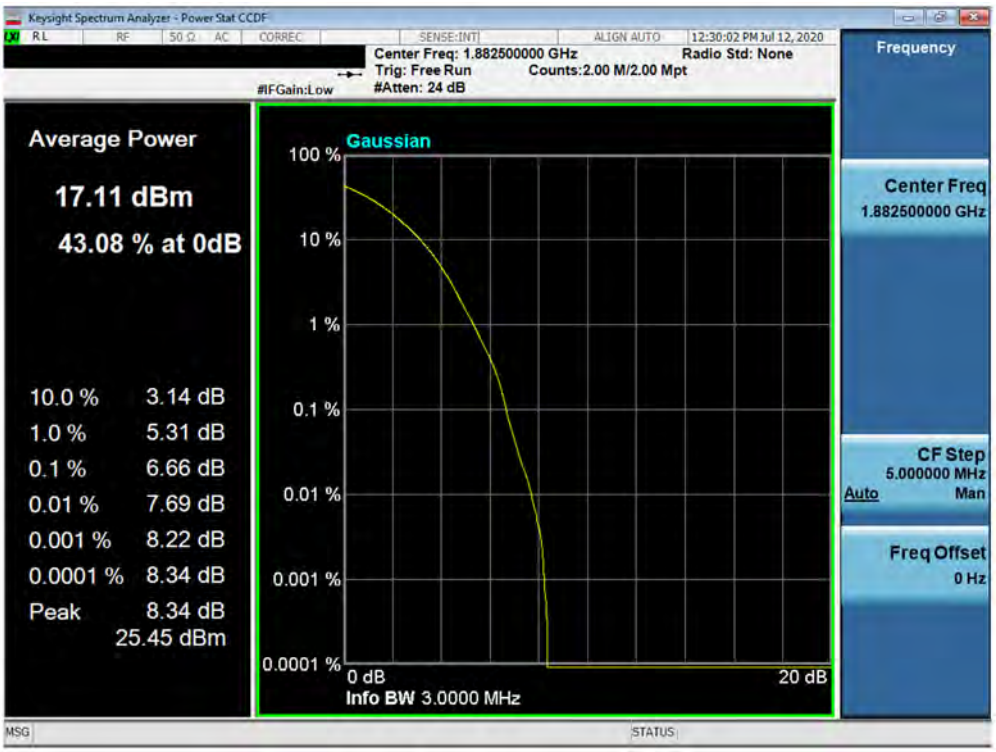
Plot 7-474. PAR Plot (Band 25/2 - 3.0MHz QPSK - Full RB Configuration)



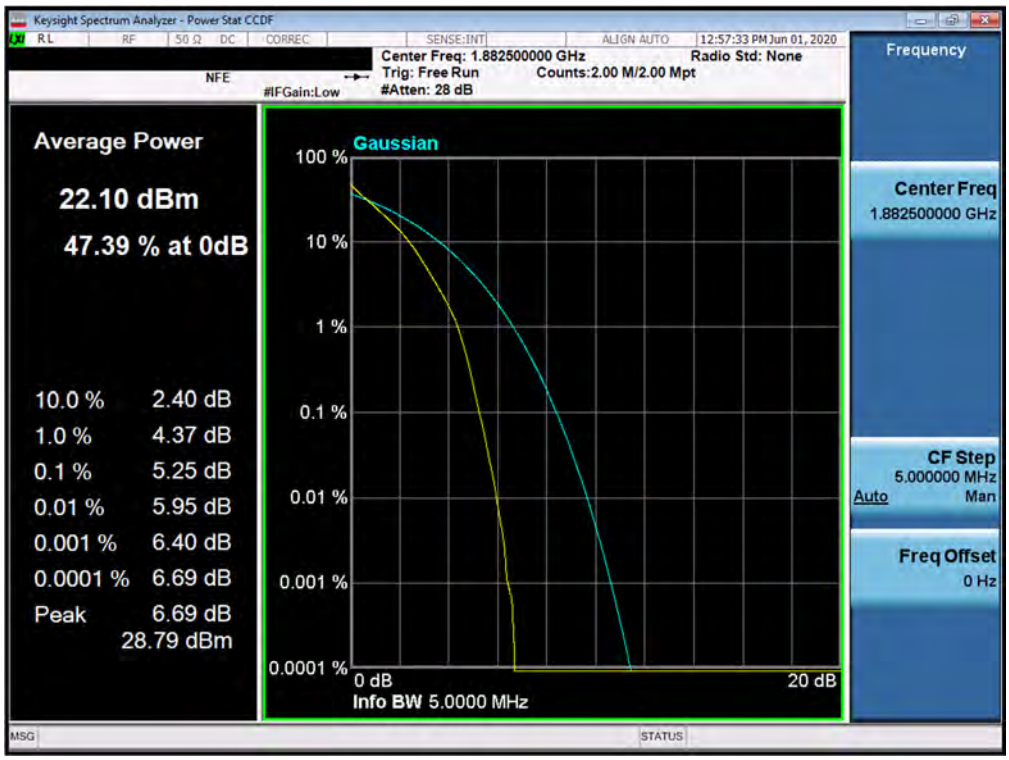
Plot 7-475. PAR Plot (Band 25/2 - 3.0MHz 16-QAM - Full RB Configuration)



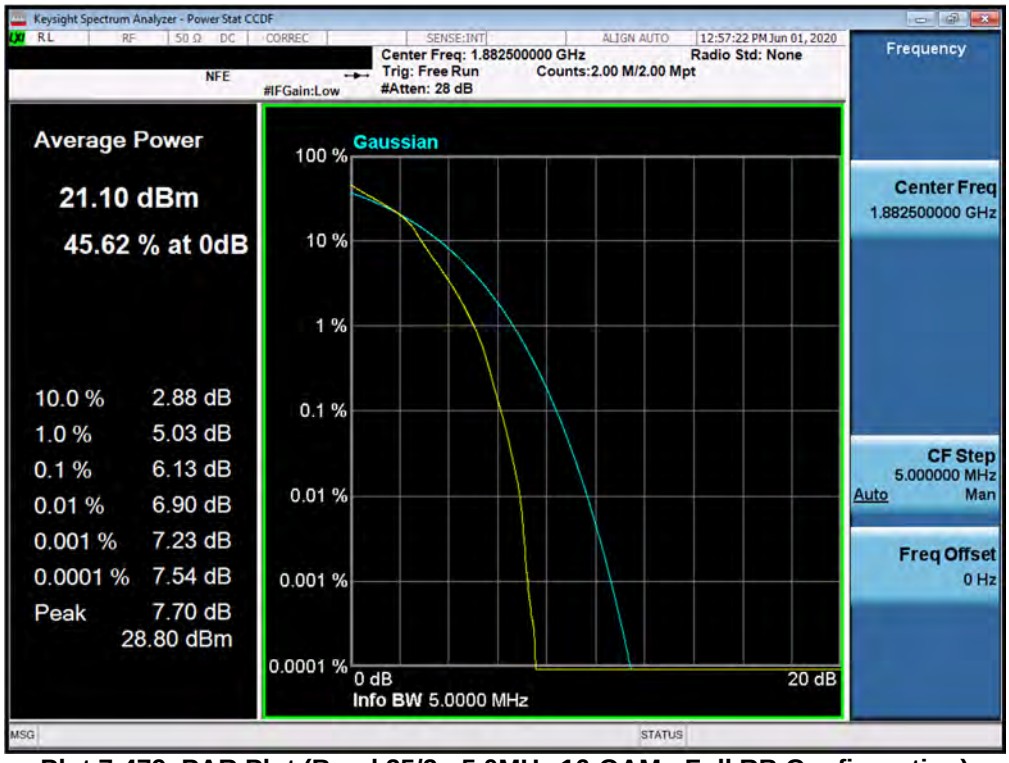
Plot 7-476. PAR Plot (Band 25/2 – 3.0MHz 64-QAM - Full RB Configuration)



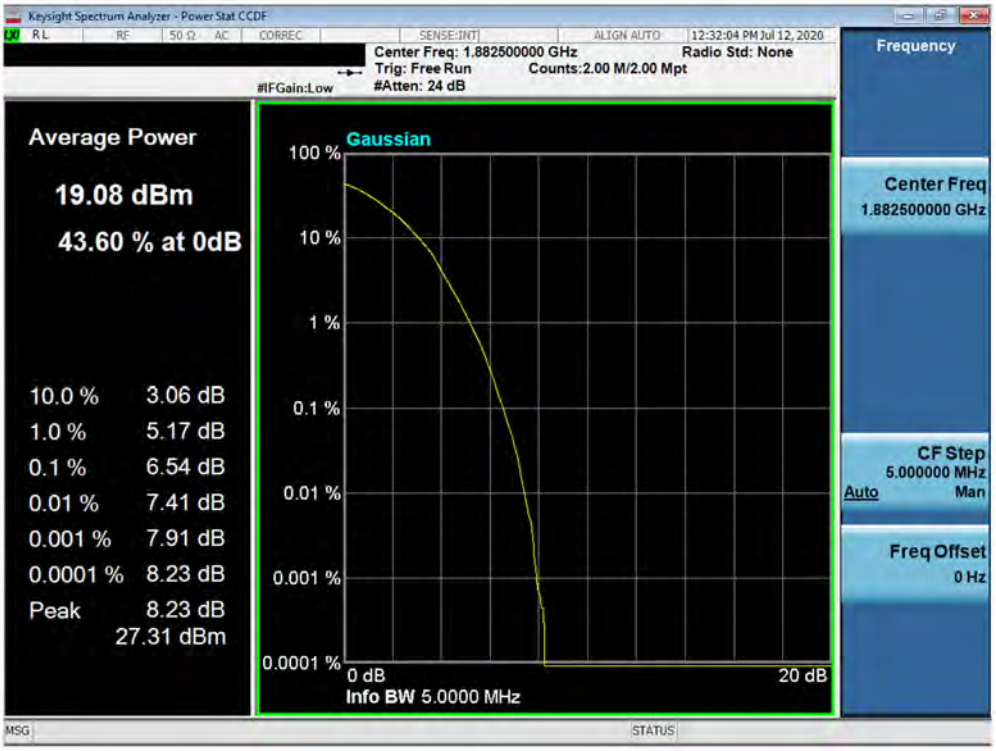
Plot 7-477. PAR Plot (Band 25/2 – 3.0MHz 256-QAM - Full RB Configuration)



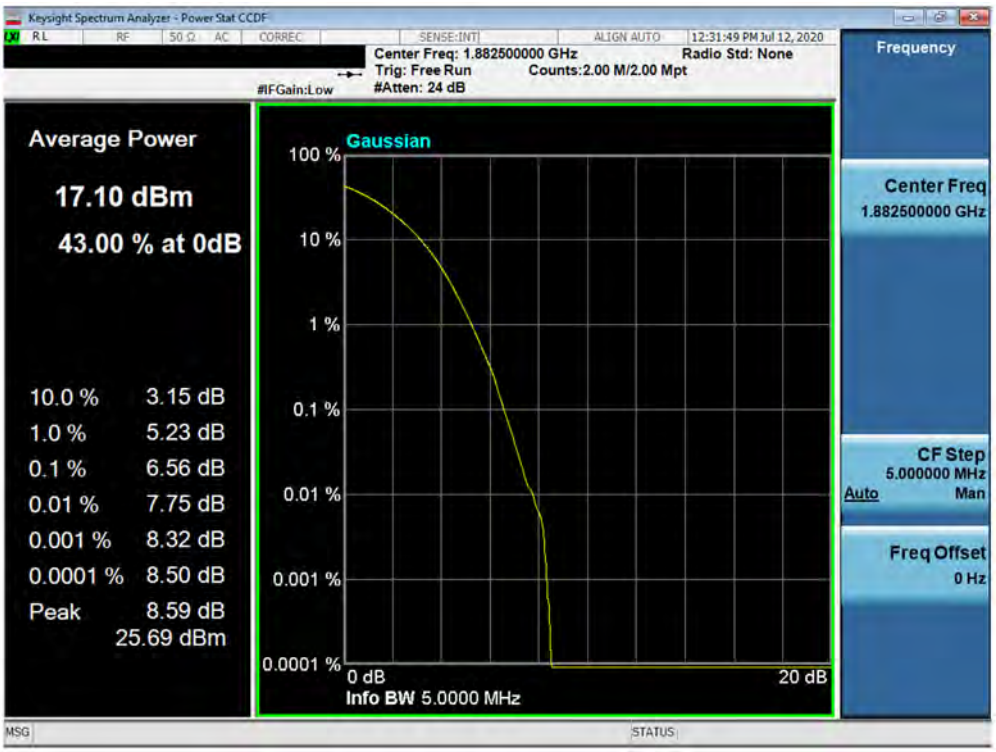
Plot 7-478. PAR Plot (Band 25/2 - 5.0MHz QPSK - Full RB Configuration)



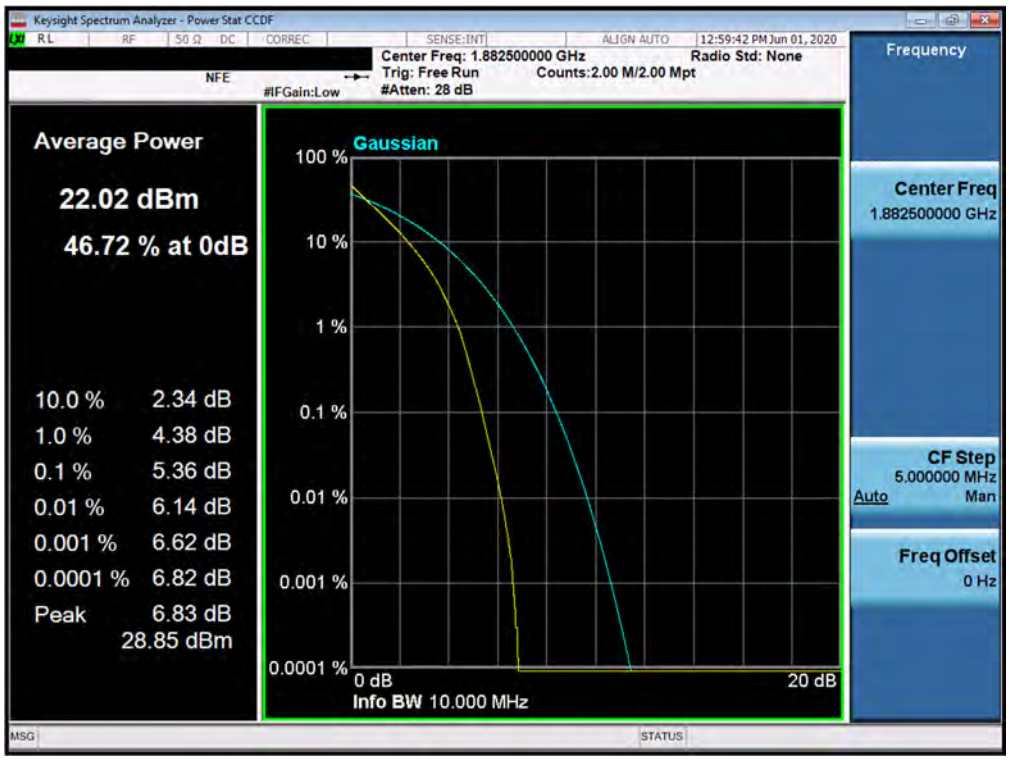
Plot 7-479. PAR Plot (Band 25/2 - 5.0MHz 16-QAM - Full RB Configuration)



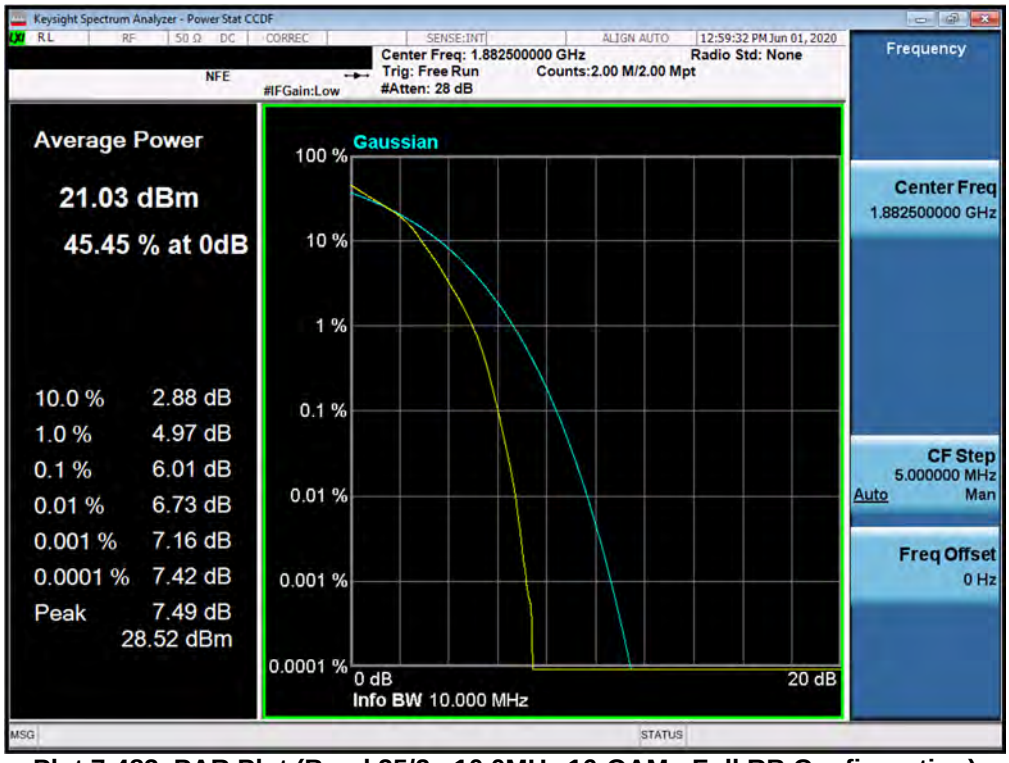
Plot 7-480. PAR Plot (Band 25/2 – 5.0MHz 64-QAM - Full RB Configuration)



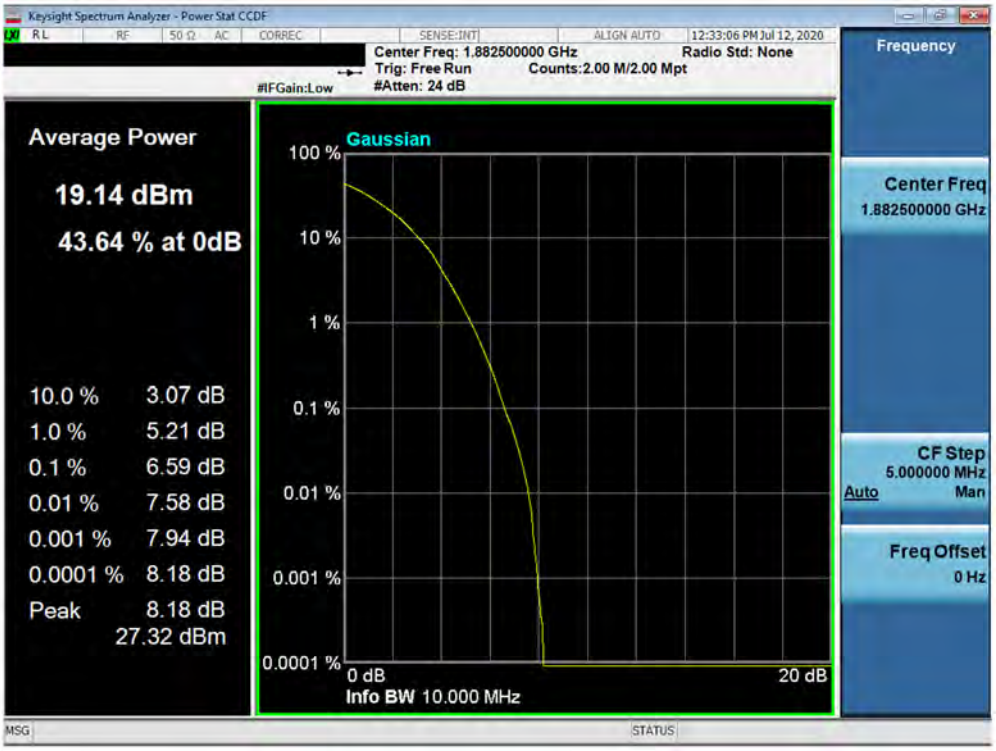
Plot 7-481. PAR Plot (Band 25/2 – 5.0MHz 256-QAM - Full RB Configuration)



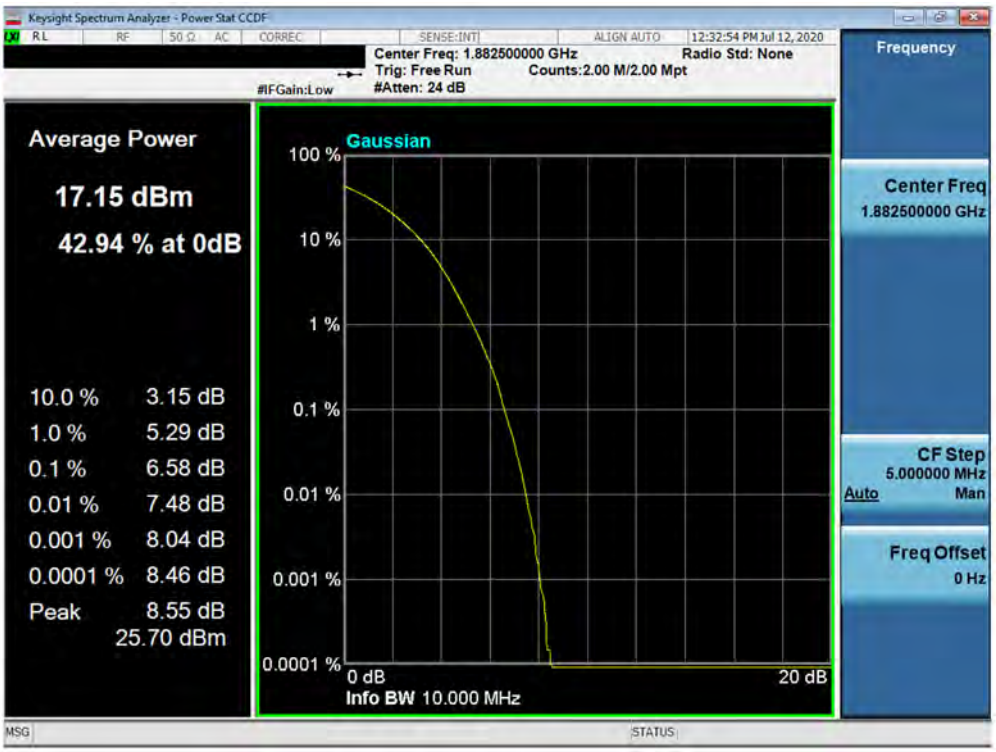
Plot 7-482. PAR Plot (Band 25/2 - 10.0MHz QPSK - Full RB Configuration)



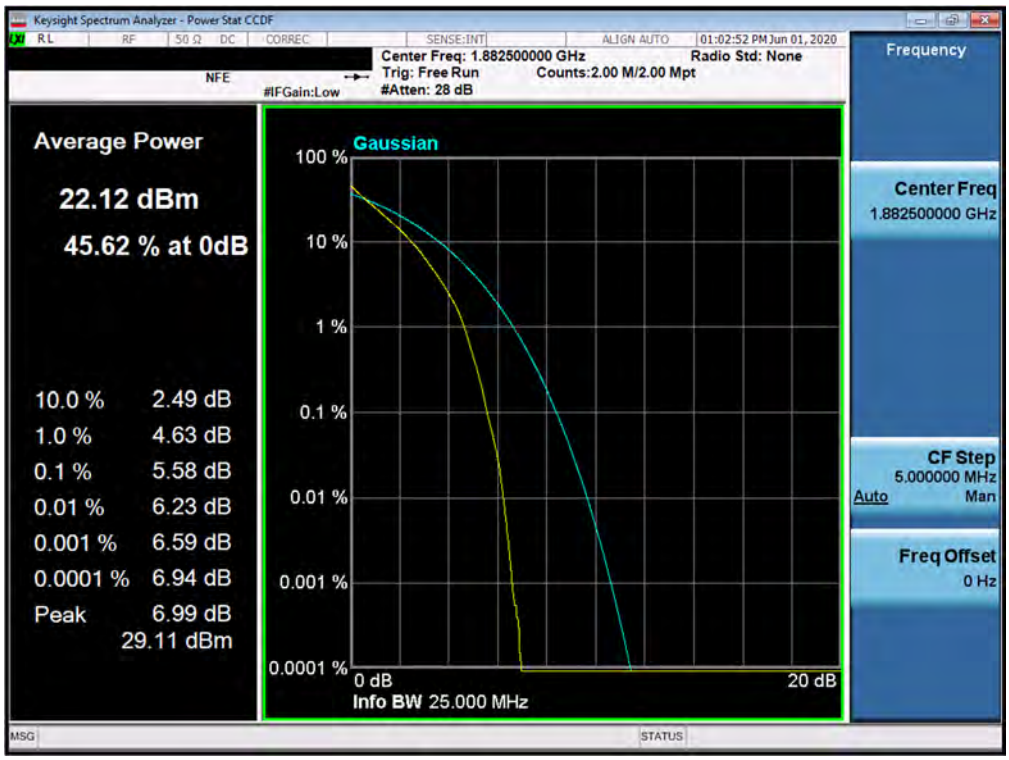
Plot 7-483. PAR Plot (Band 25/2 - 10.0MHz 16-QAM - Full RB Configuration)



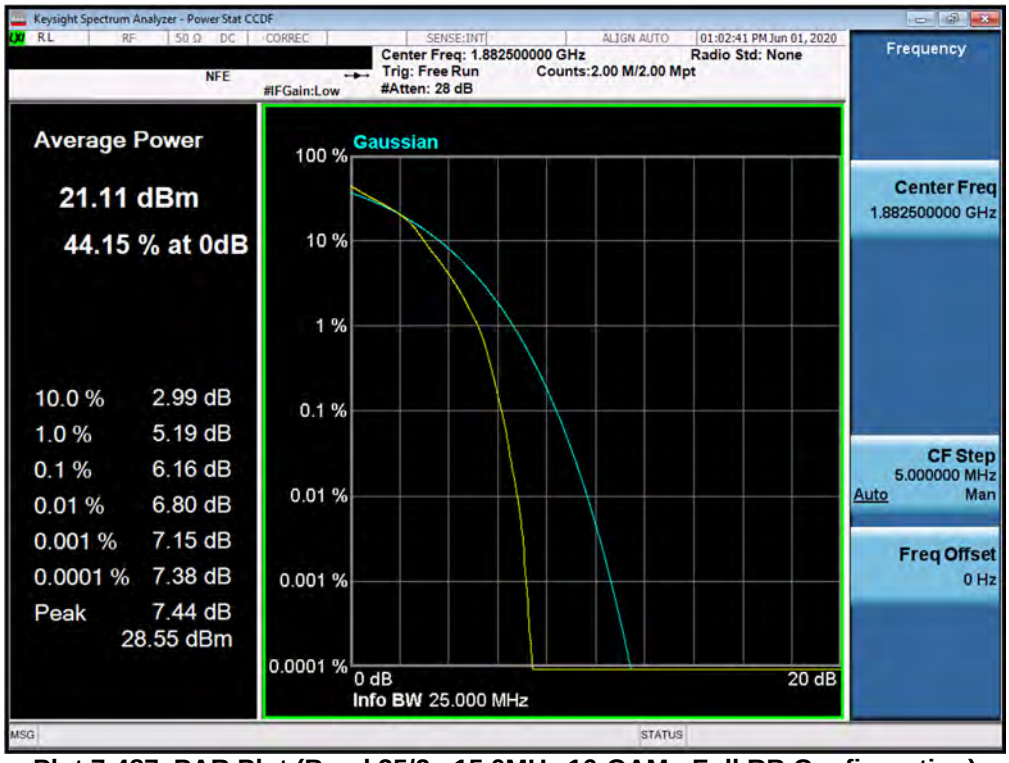
Plot 7-484. PAR Plot (Band 25/2 – 10.0MHz 64-QAM - Full RB Configuration)



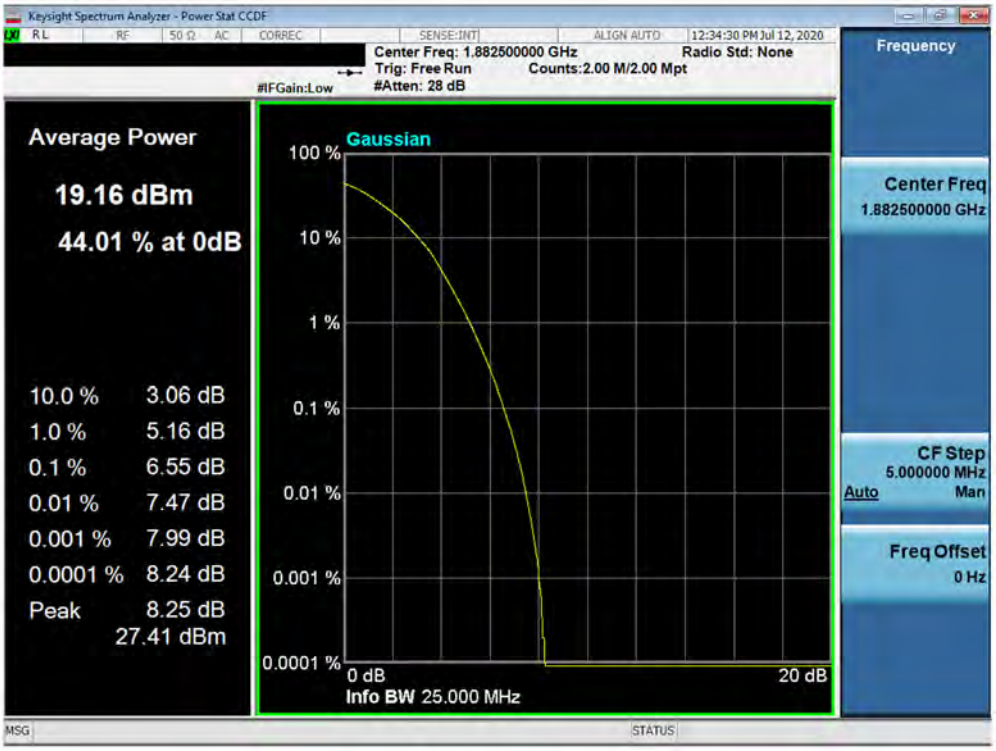
Plot 7-485. PAR Plot (Band 25/2 – 10.0MHz 256-QAM - Full RB Configuration)



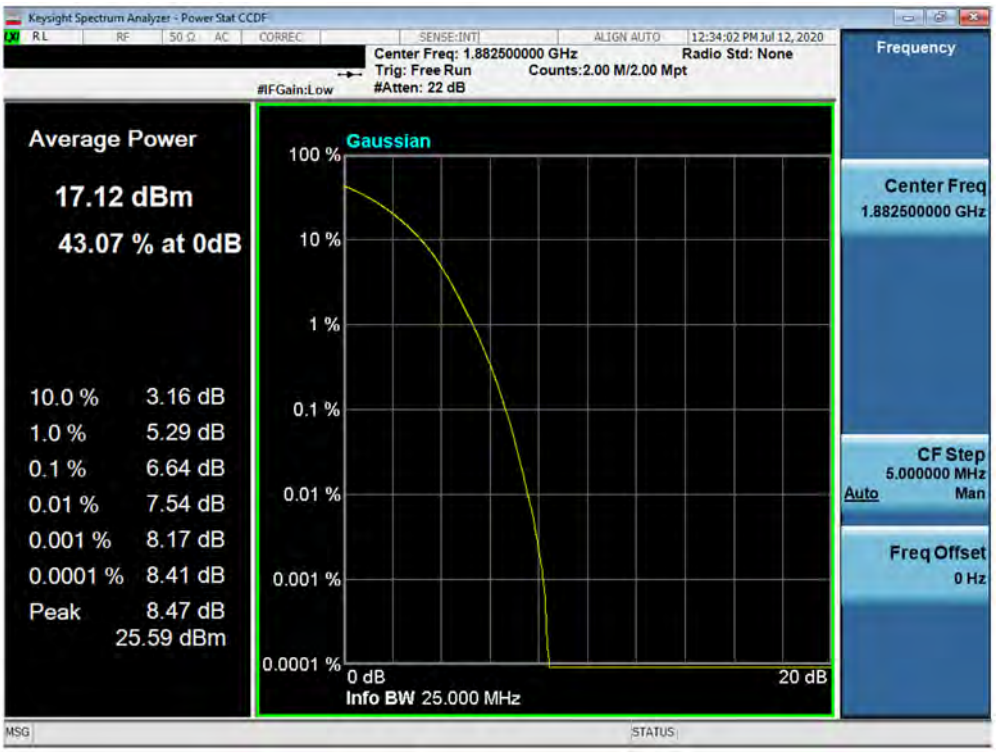
Plot 7-486. PAR Plot (Band 25/2 - 15.0MHz QPSK - Full RB Configuration)



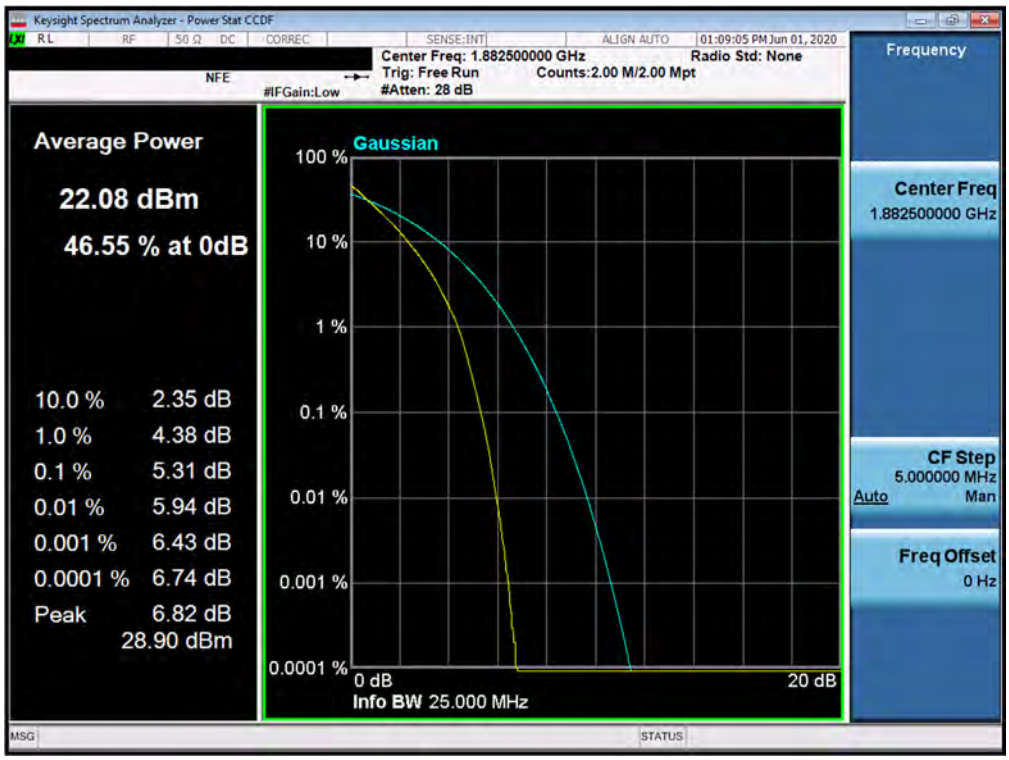
Plot 7-487. PAR Plot (Band 25/2 - 15.0MHz 16-QAM - Full RB Configuration)



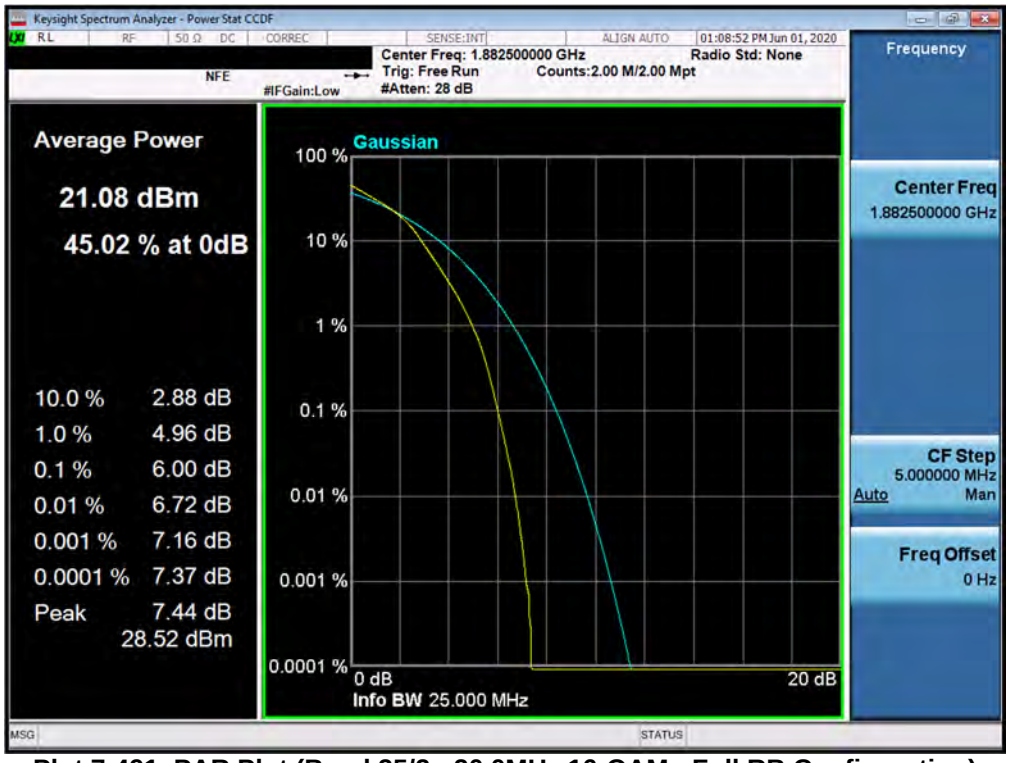
Plot 7-488. PAR Plot (Band 25/2 – 15.0MHz 64-QAM - Full RB Configuration)



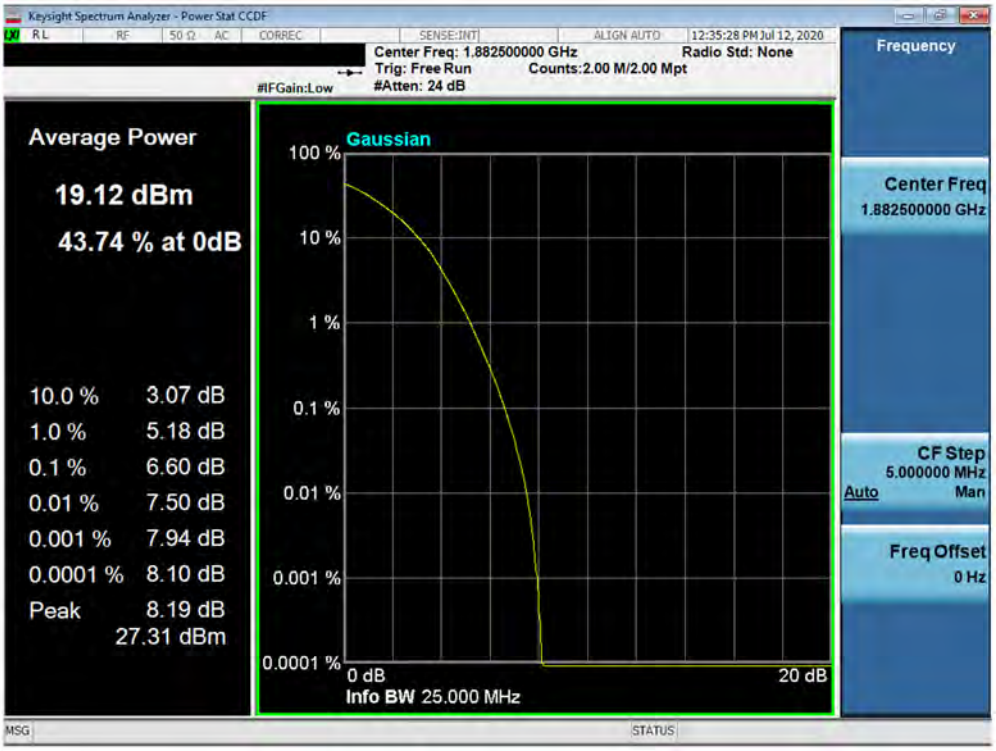
Plot 7-489. PAR Plot (Band 25/2 – 15.0MHz 256-QAM - Full RB Configuration)



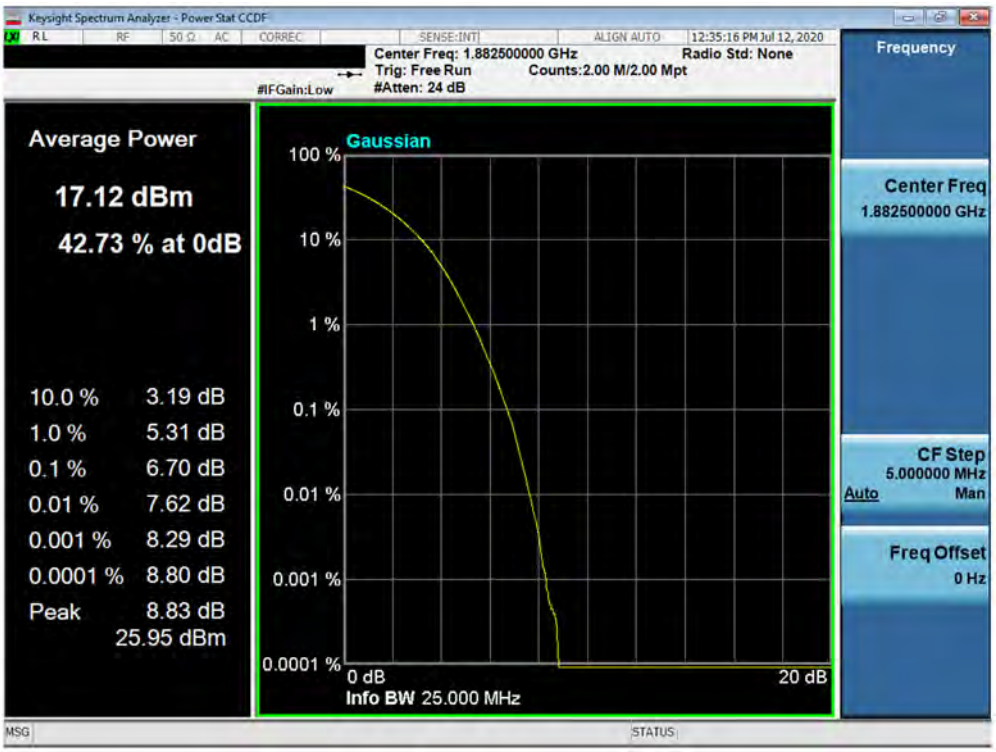
Plot 7-490. PAR Plot (Band 25/2 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-491. PAR Plot (Band 25/2 - 20.0MHz 16-QAM - Full RB Configuration)

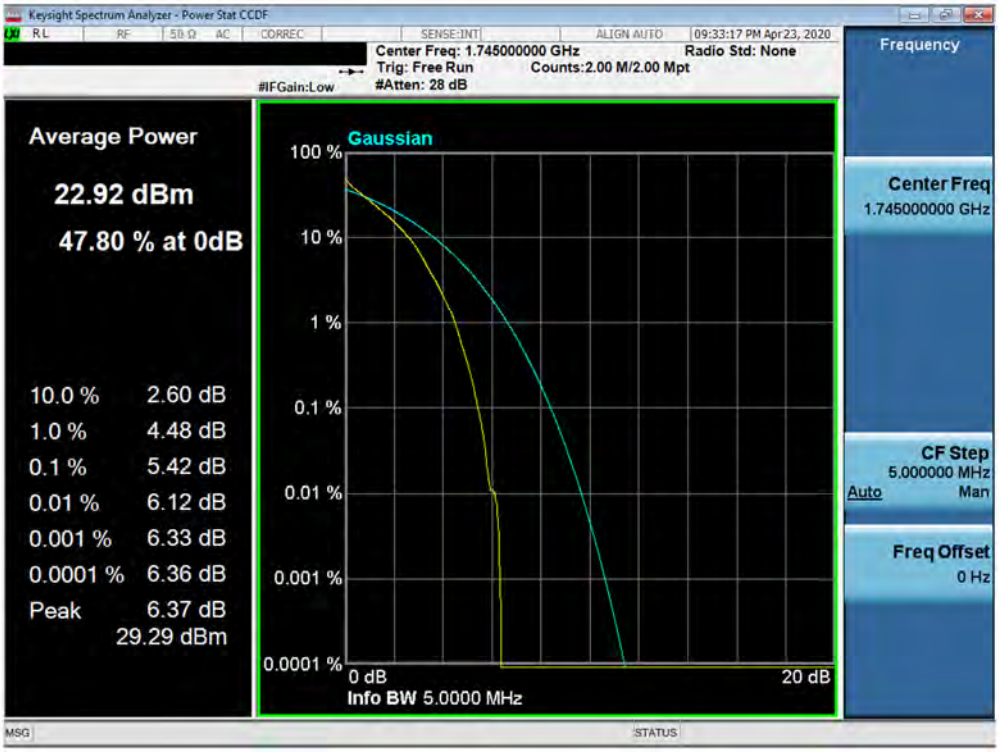


Plot 7-492. PAR Plot (Band 25/2 – 20.0MHz 64-QAM - Full RB Configuration)

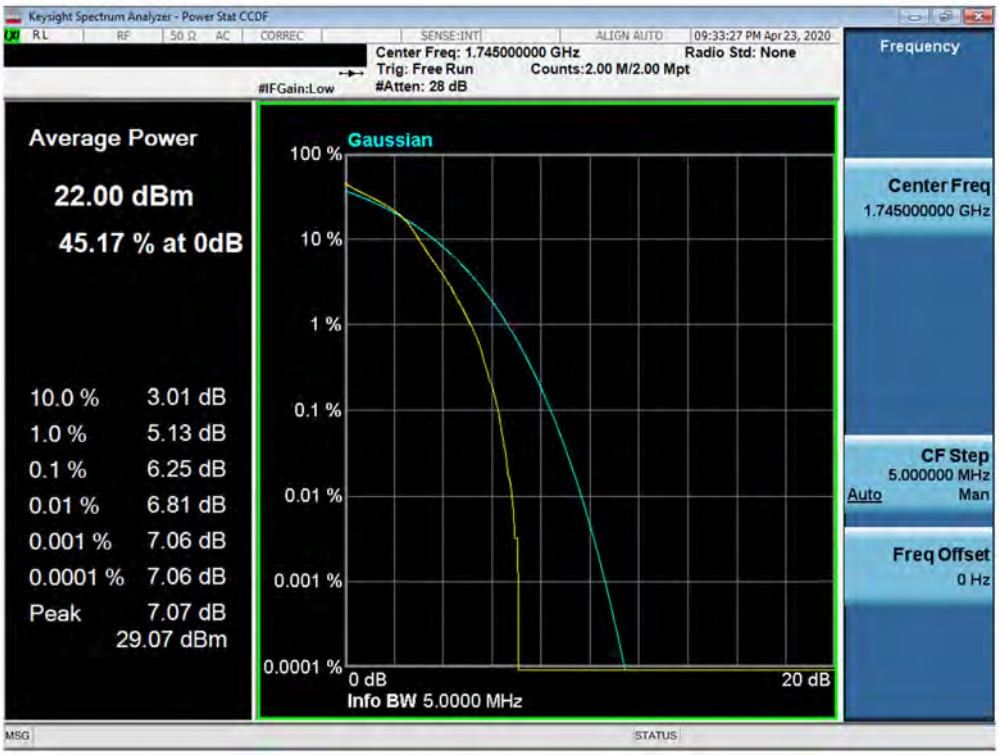


Plot 7-493. PAR Plot (Band 25/2 – 20.0MHz 256-QAM - Full RB Configuration)

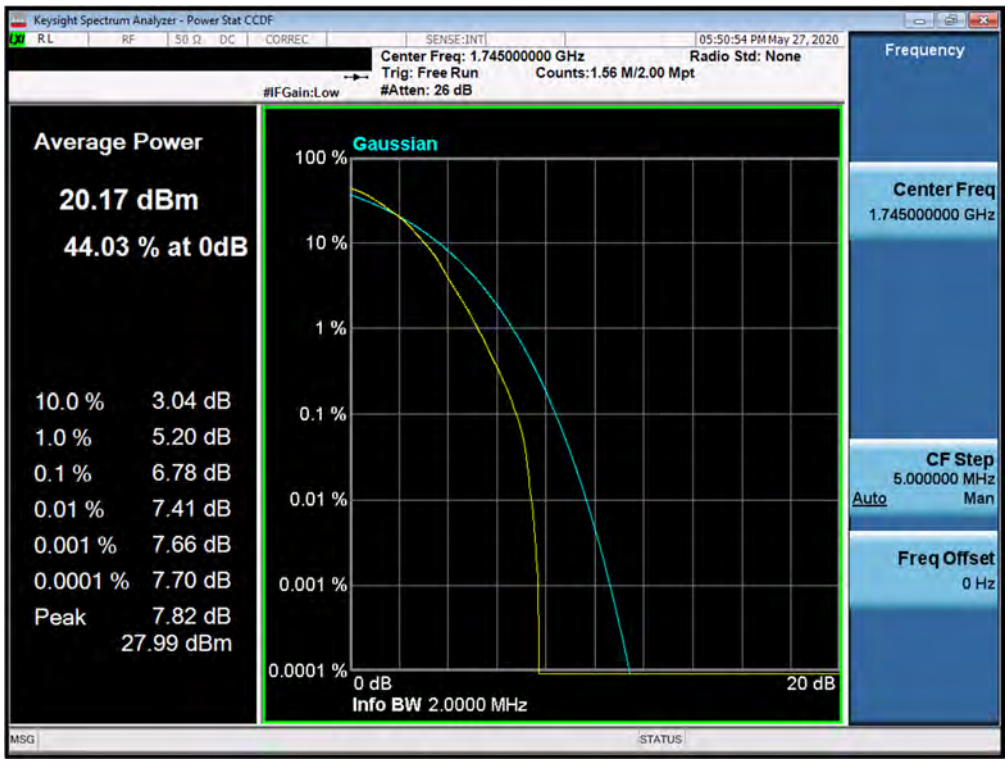
Band 66/4



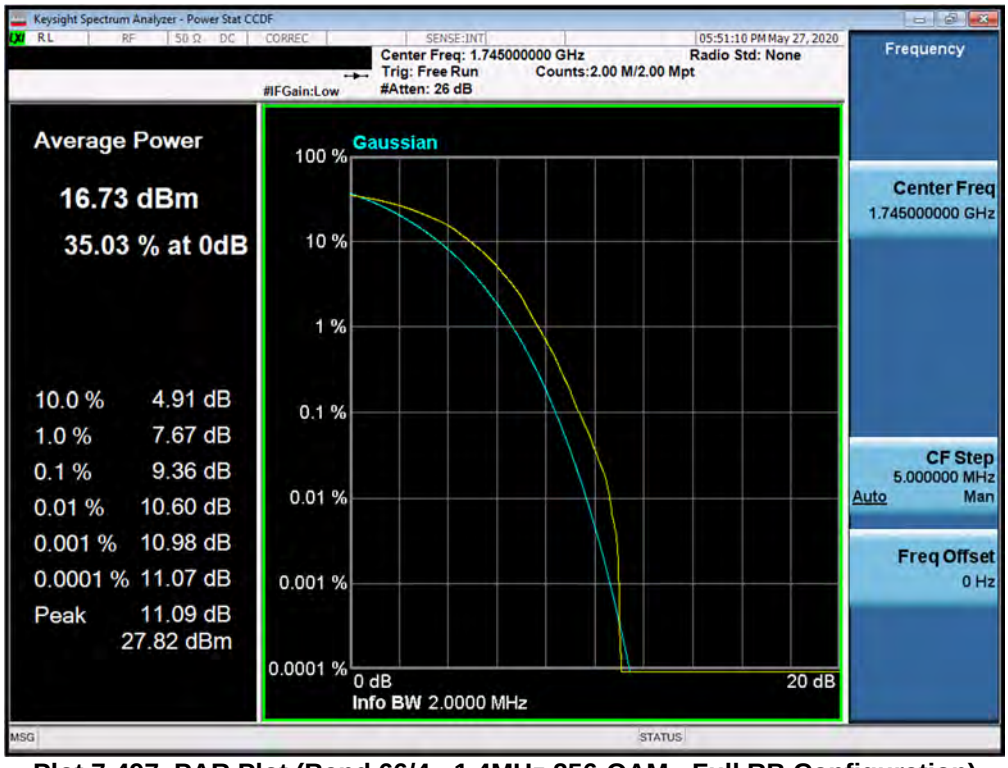
Plot 7-494. PAR Plot (Band 66/4 - 1.4MHz QPSK - Full RB Configuration)



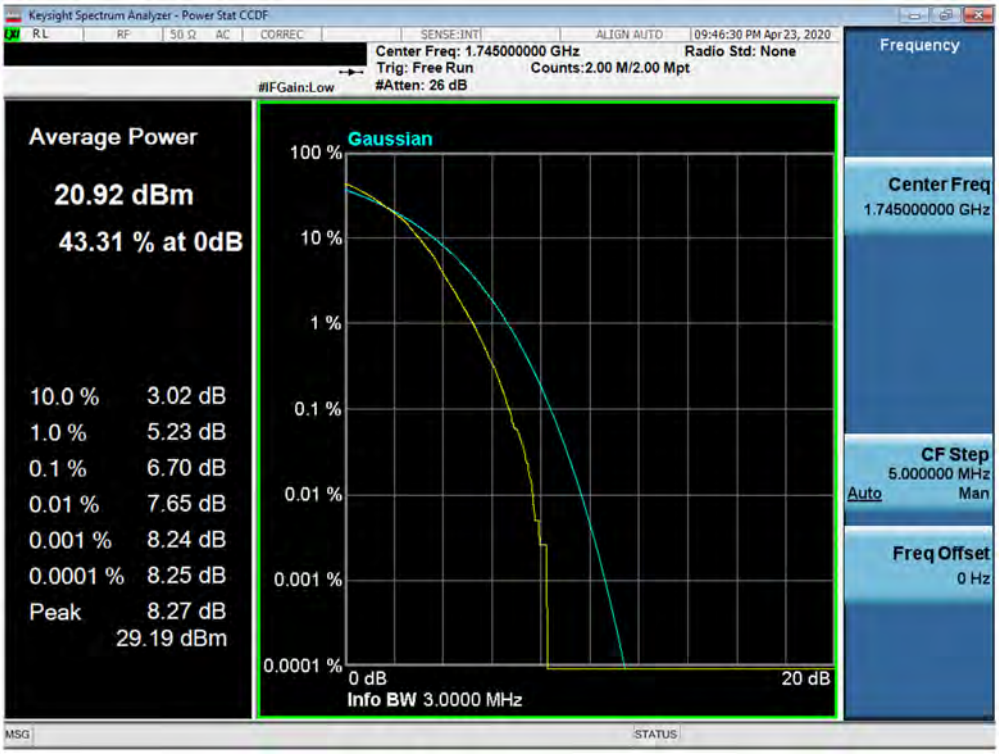
Plot 7-495. PAR Plot (Band 66/4 - 1.4MHz 16-QAM - Full RB Configuration)



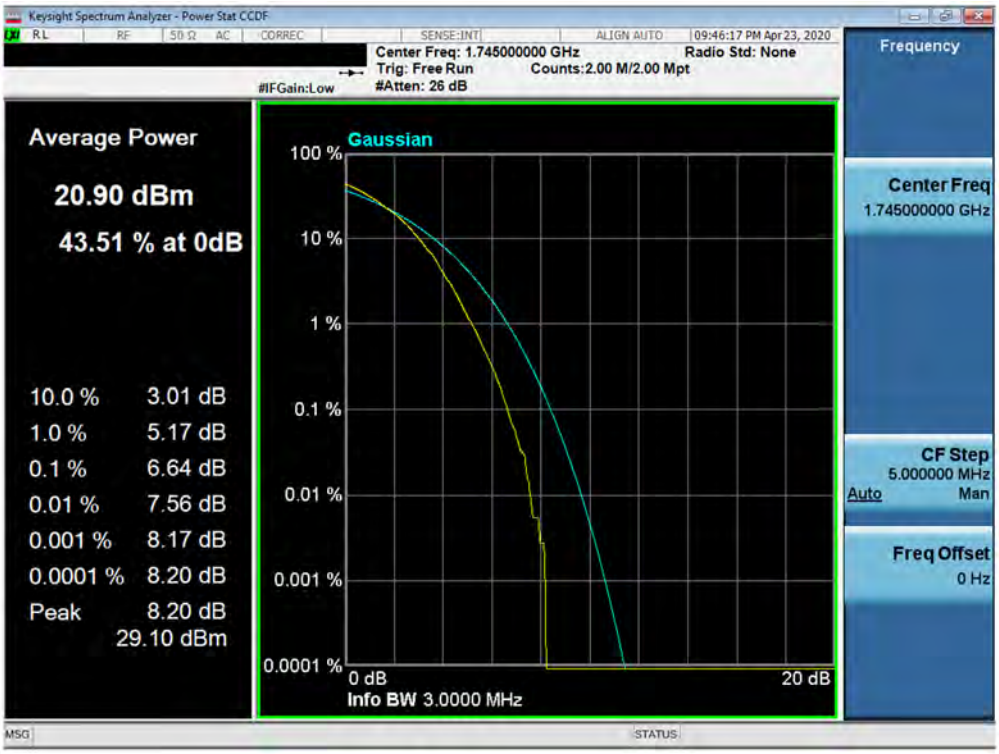
Plot 7-496. PAR Plot (Band 66/4 - 1.4MHz 64-QAM - Full RB Configuration)



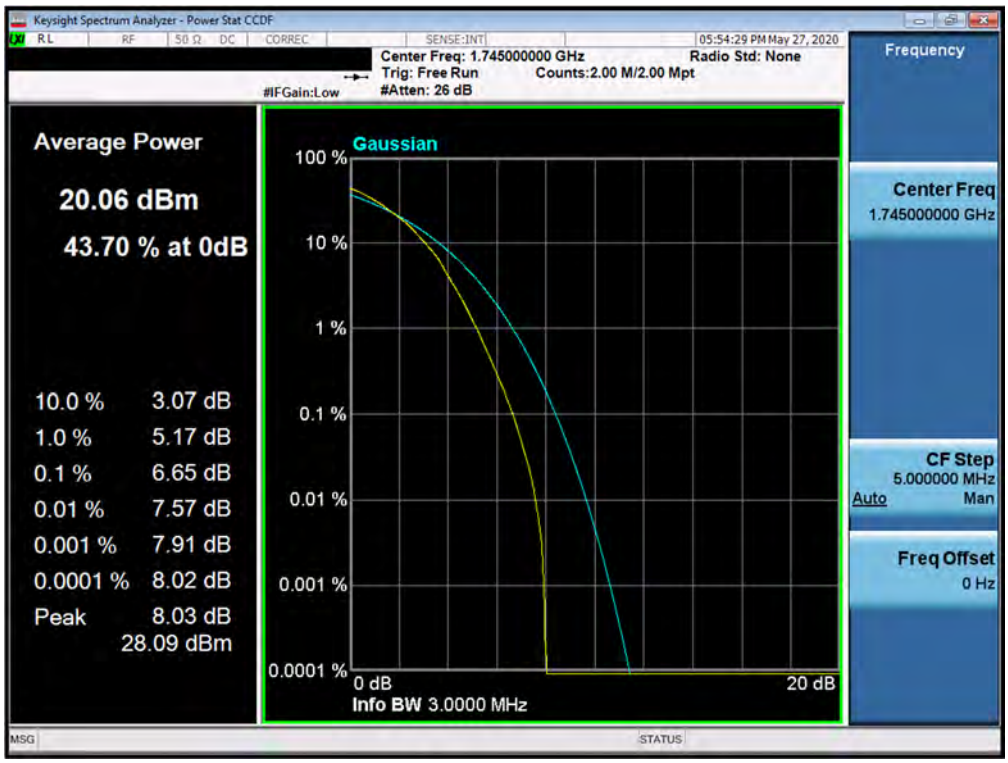
Plot 7-497. PAR Plot (Band 66/4 - 1.4MHz 256-QAM - Full RB Configuration)



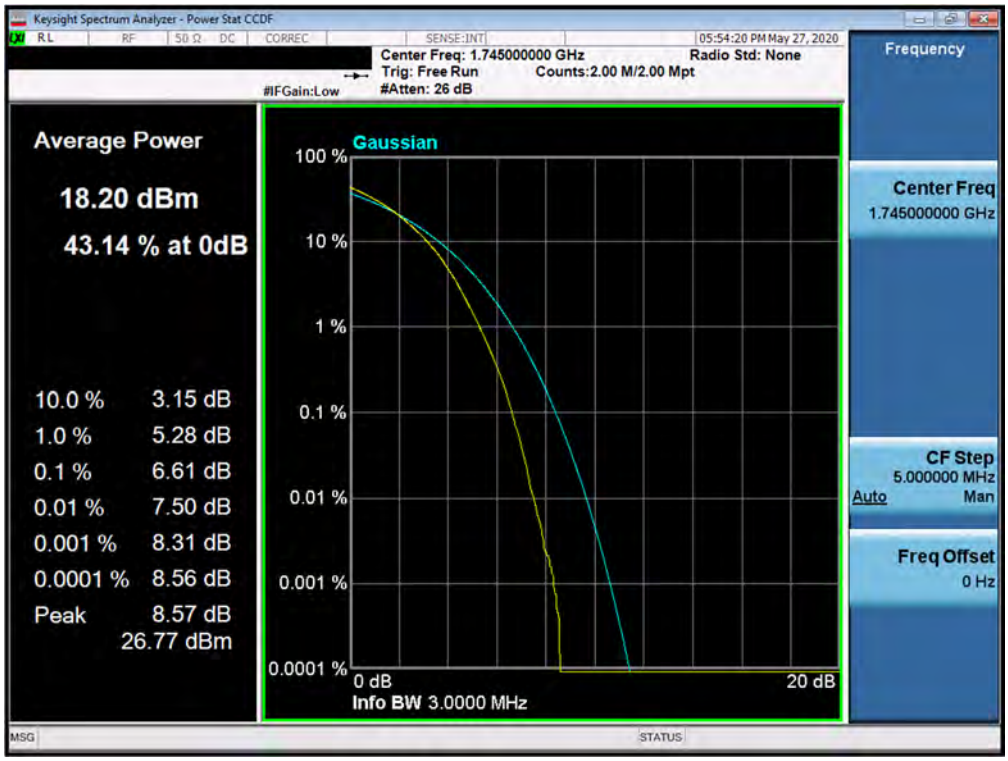
Plot 7-498. PAR Plot (Band 66/4 - 3.0MHz QPSK - Full RB Configuration)



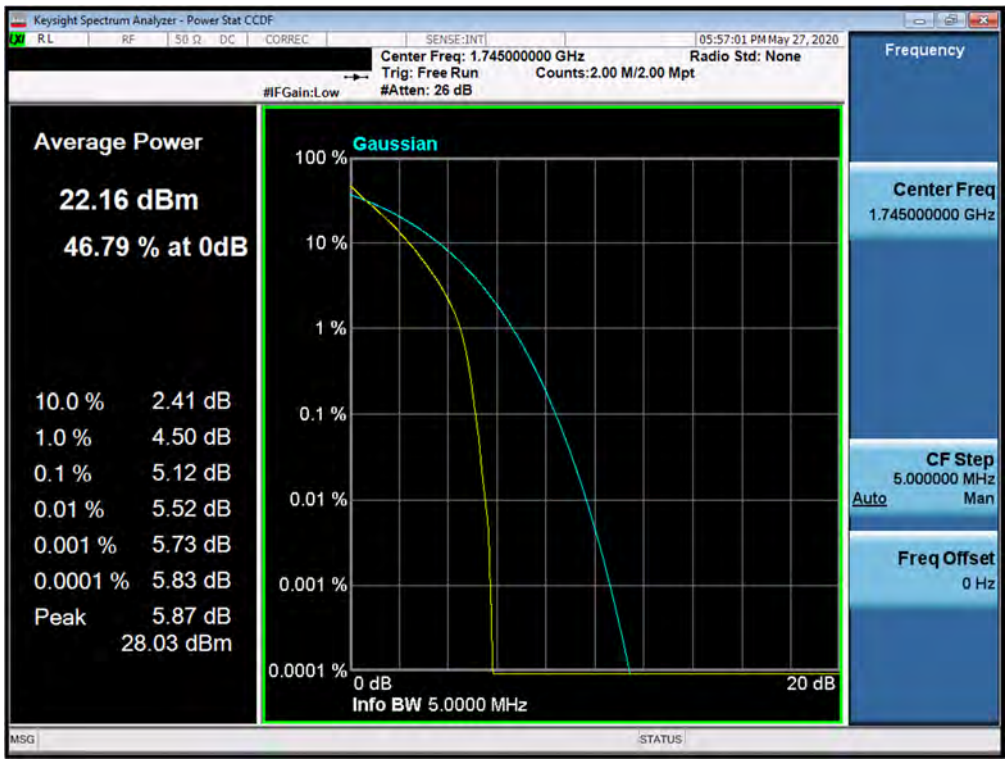
Plot 7-499. PAR Plot (Band 66/4 - 3.0MHz 16-QAM - Full RB Configuration)



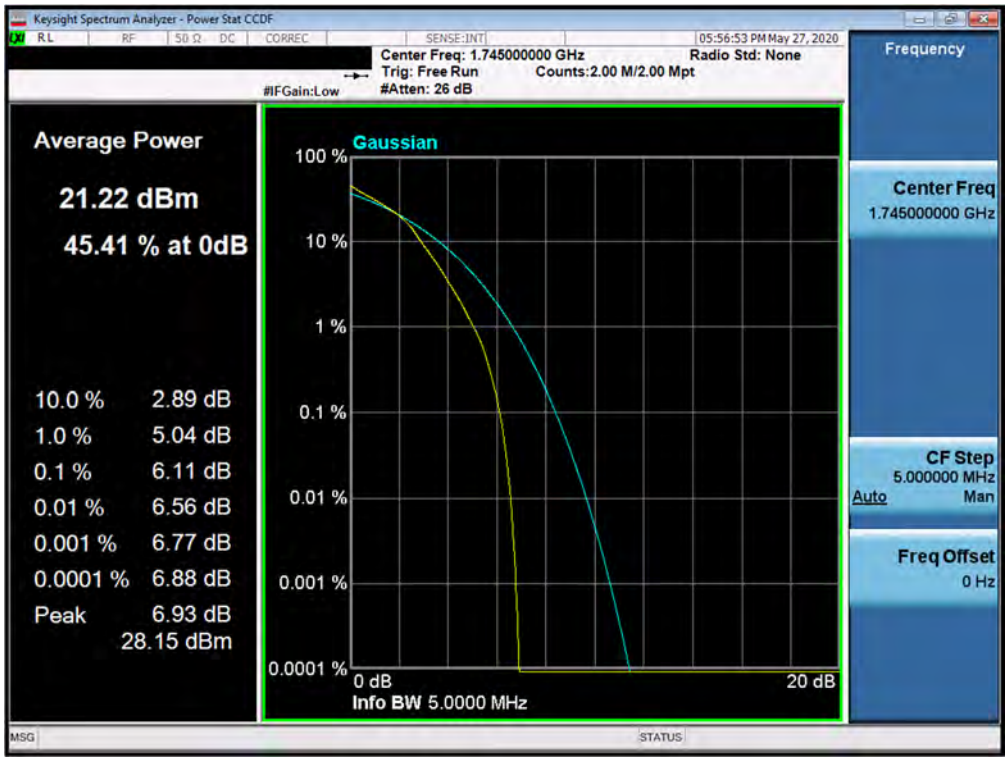
Plot 7-500. PAR Plot (Band 66/4 - 3.0MHz 64-QAM - Full RB Configuration)



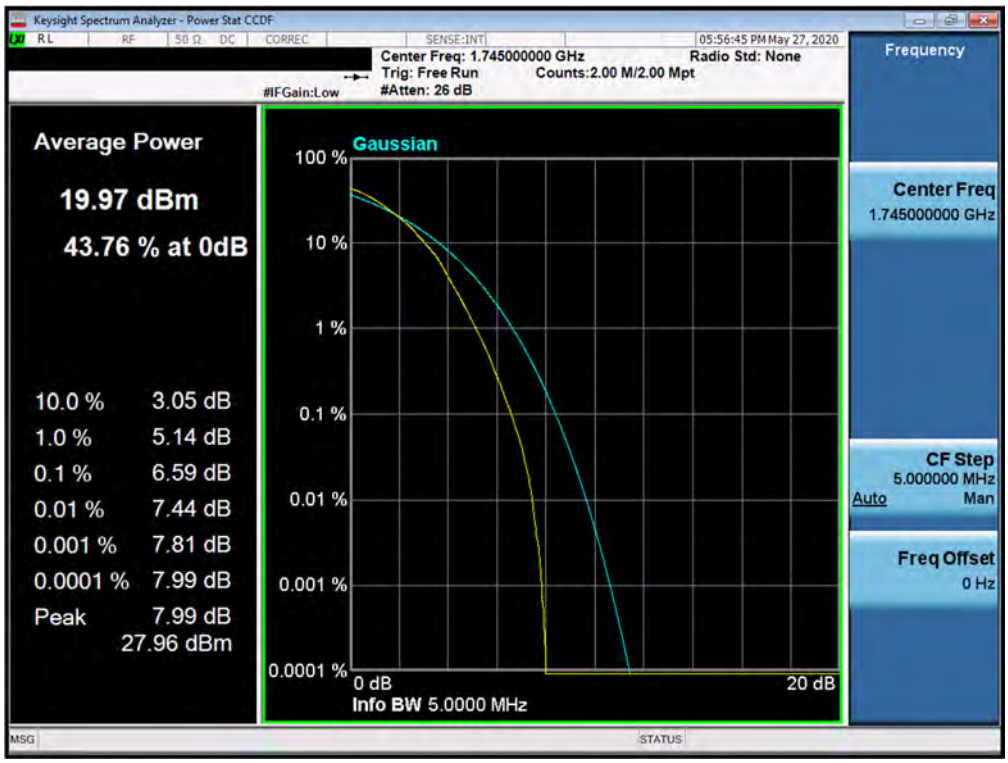
Plot 7-501. PAR Plot (Band 66/4 - 3.0MHz 256-QAM - Full RB Configuration)



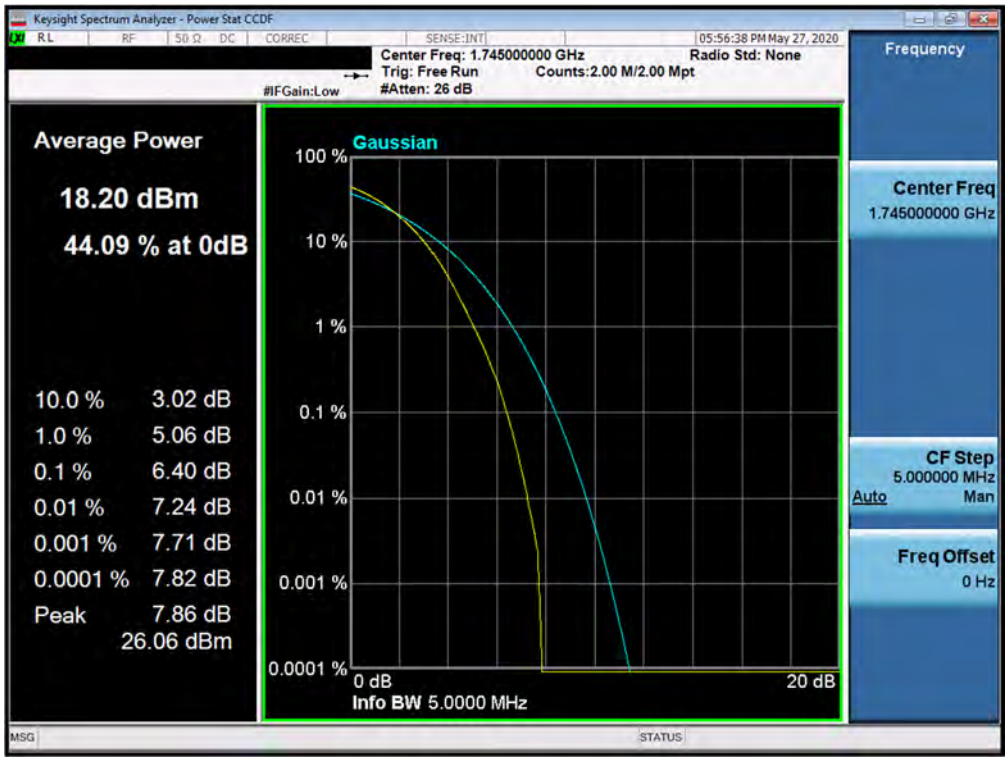
Plot 7-502. PAR Plot (Band 66/4 - 5.0MHz QPSK - Full RB Configuration)



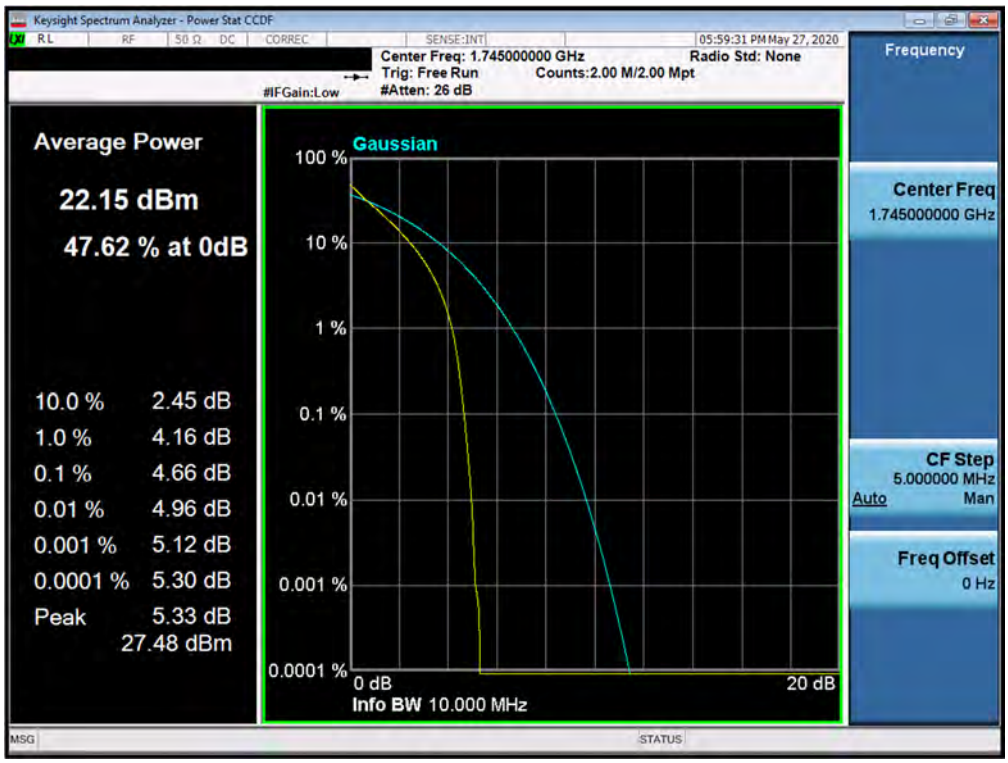
Plot 7-503. PAR Plot (Band 66/4 - 5.0MHz 16-QAM - Full RB Configuration)



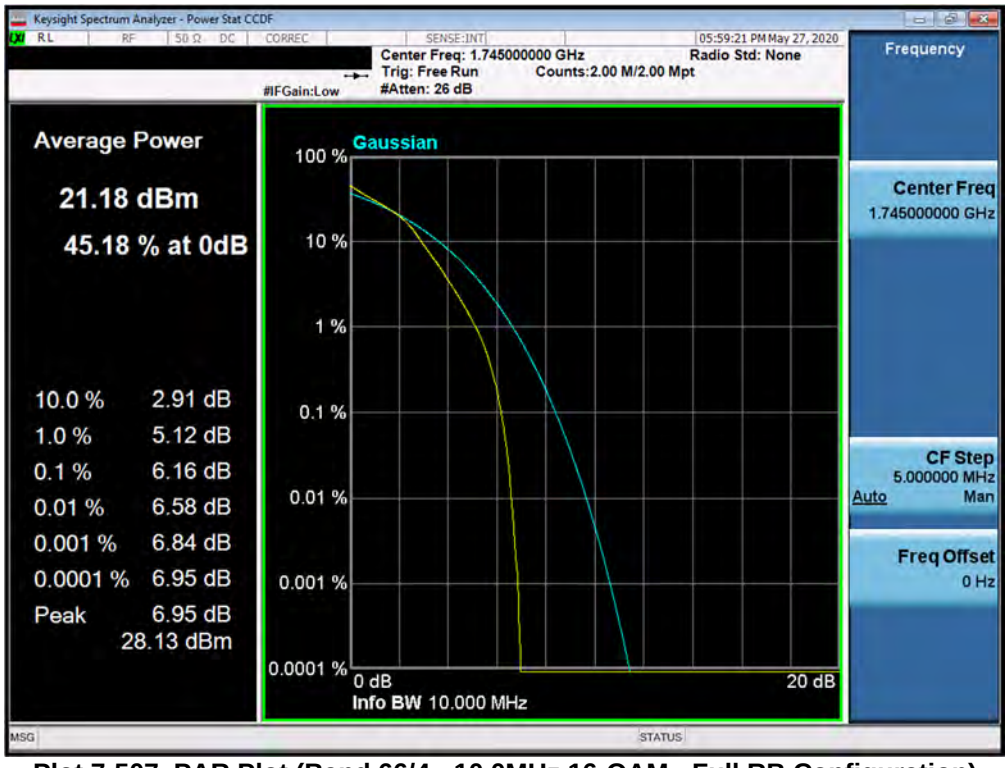
Plot 7-504. PAR Plot (Band 66/4 - 5.0MHz 64-QAM - Full RB Configuration)



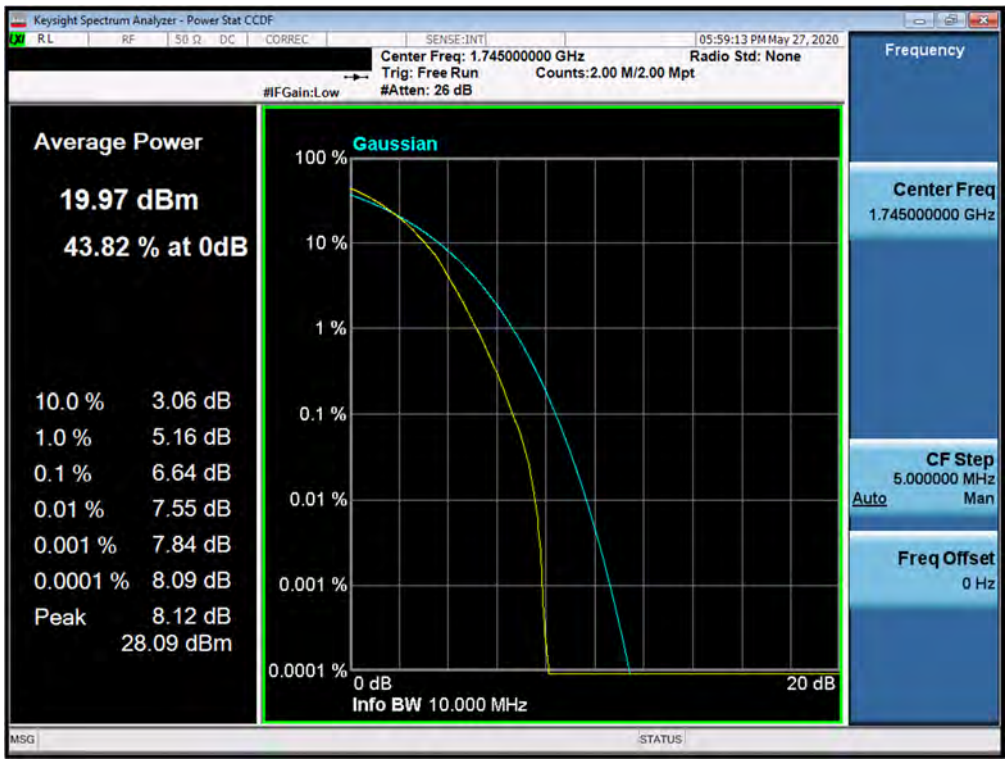
Plot 7-505. PAR Plot (Band 66/4 - 5.0MHz 256-QAM - Full RB Configuration)



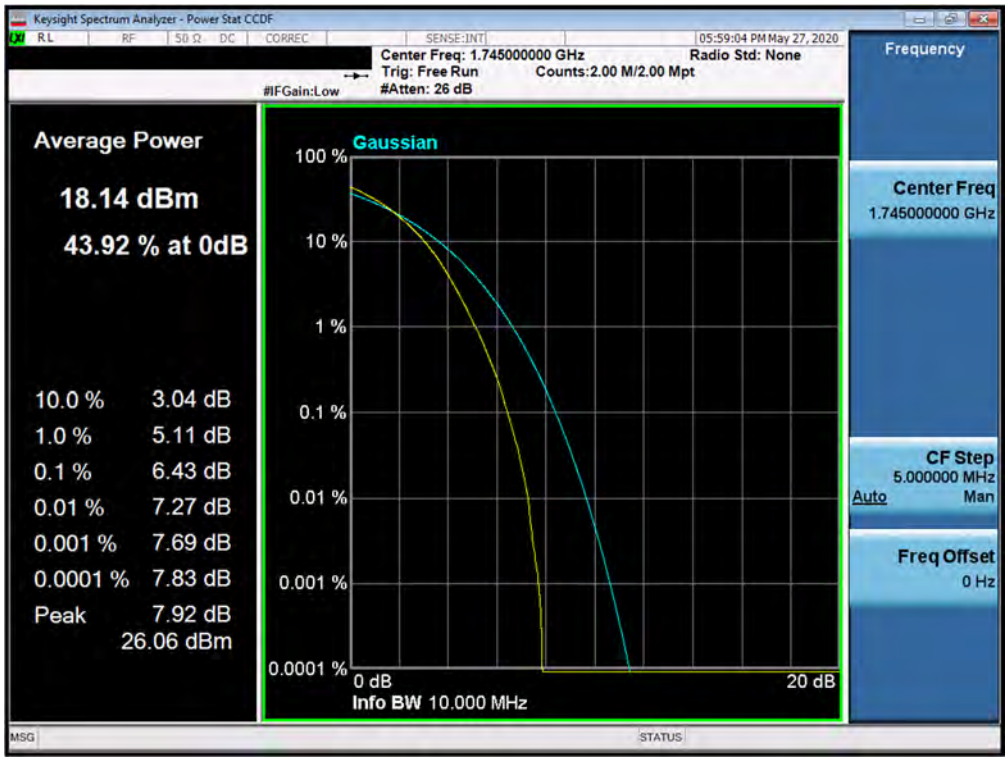
Plot 7-506. PAR Plot (Band 66/4 - 10.0MHz QPSK - Full RB Configuration)



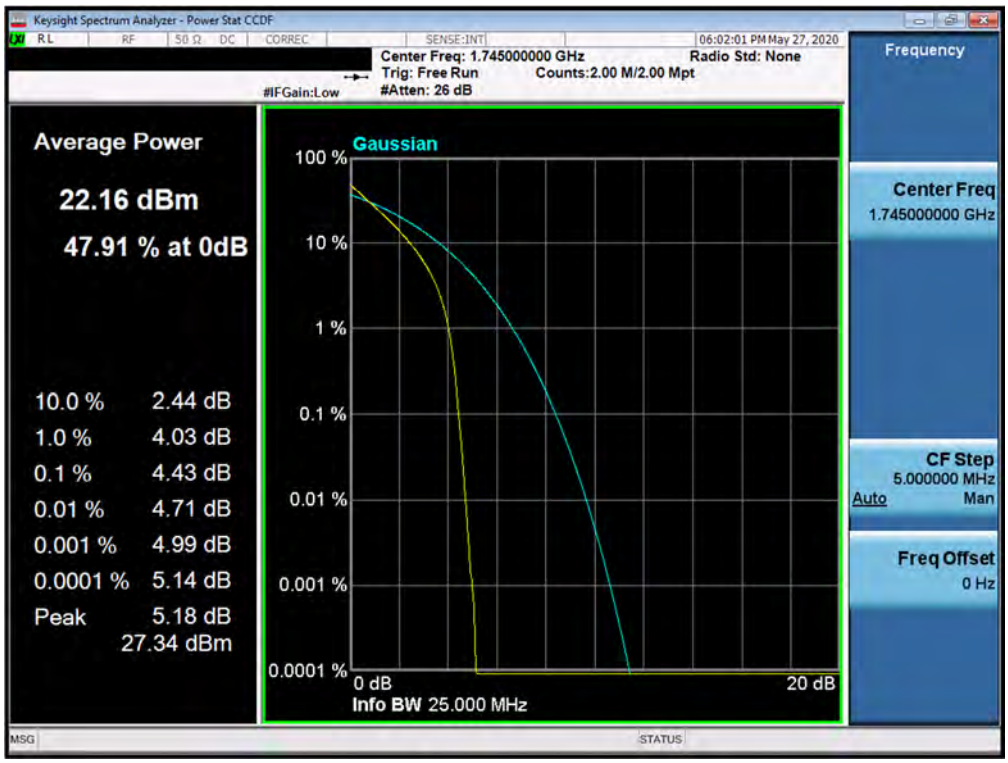
Plot 7-507. PAR Plot (Band 66/4 - 10.0MHz 16-QAM - Full RB Configuration)



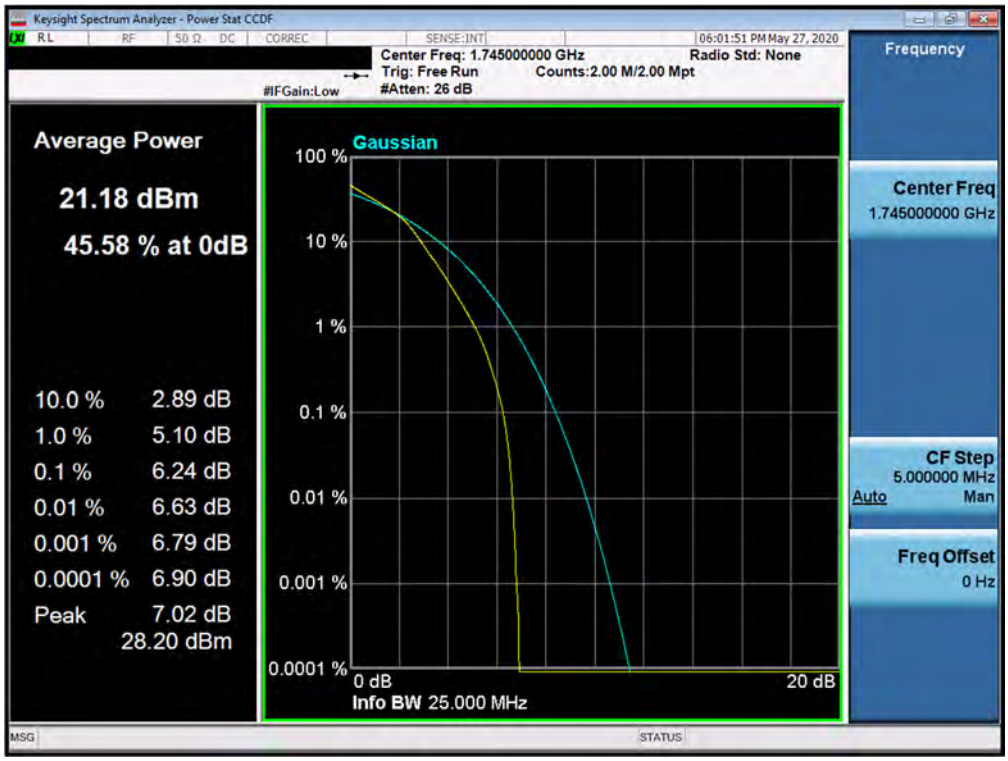
Plot 7-508. PAR Plot (Band 66/4 - 10.0MHz 64-QAM - Full RB Configuration)



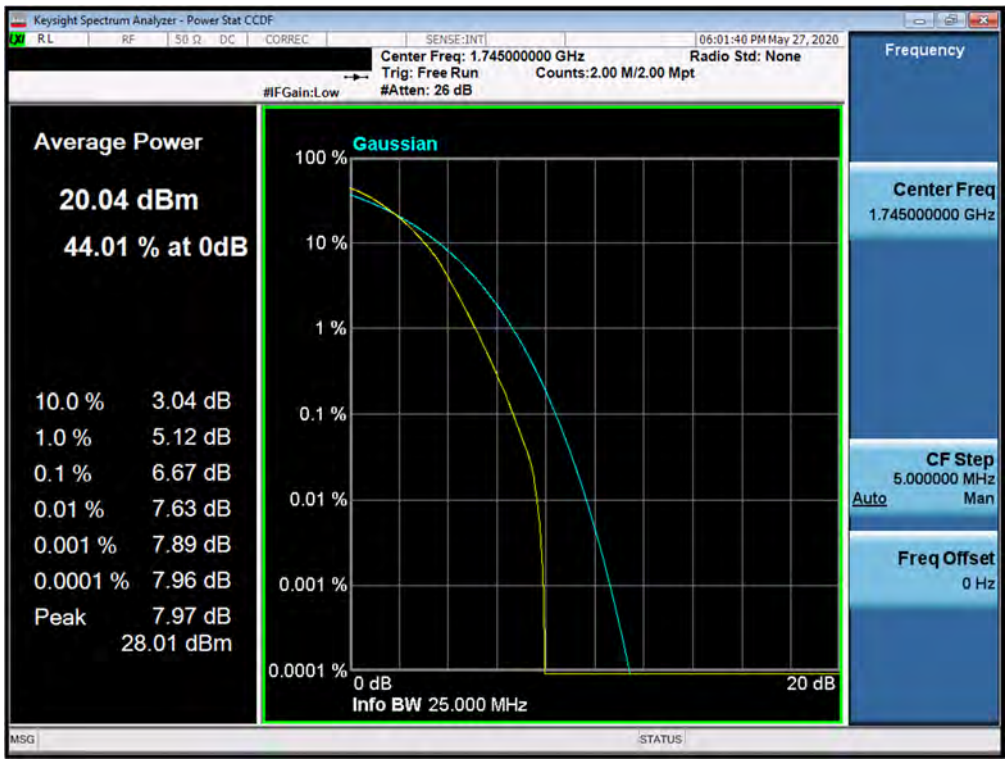
Plot 7-509. PAR Plot (Band 66/4 - 10.0MHz 256-QAM - Full RB Configuration)



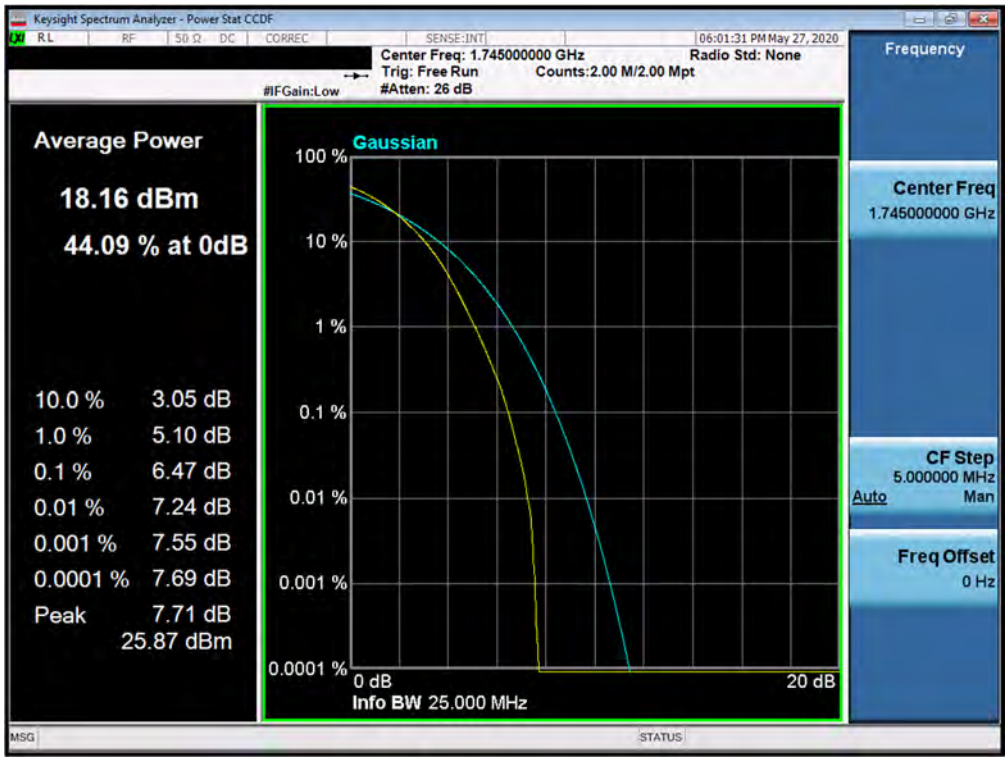
Plot 7-510. PAR Plot (Band 66/4 - 15.0MHz QPSK - Full RB Configuration)



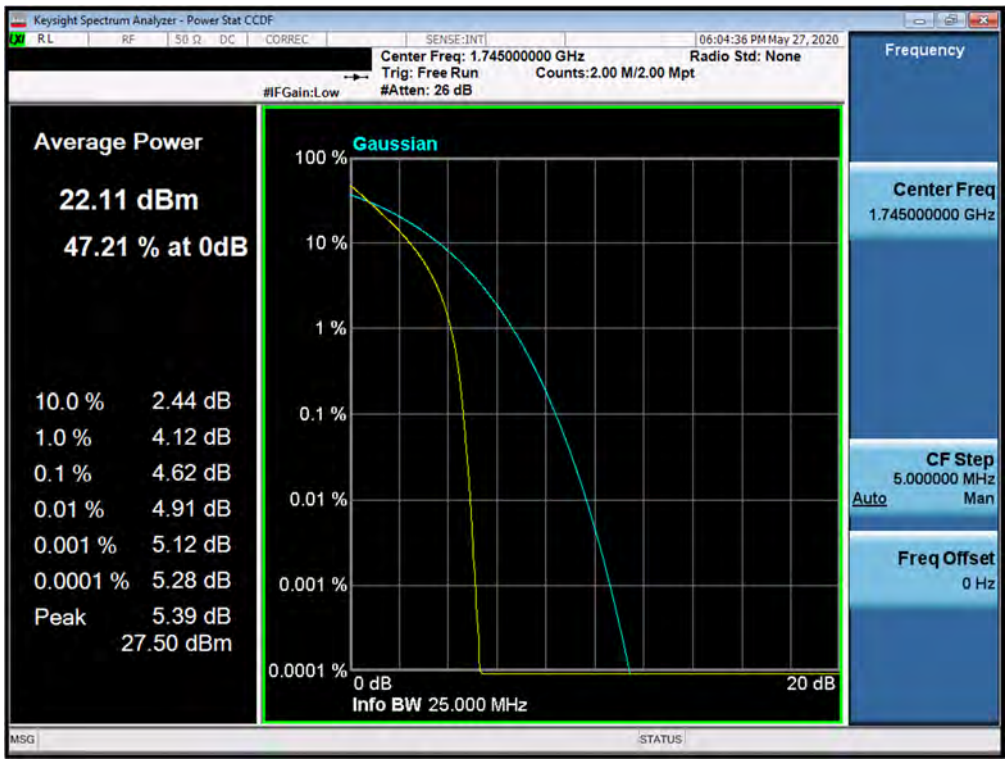
Plot 7-511. PAR Plot (Band 66/4 - 15.0MHz 16-QAM - Full RB Configuration)



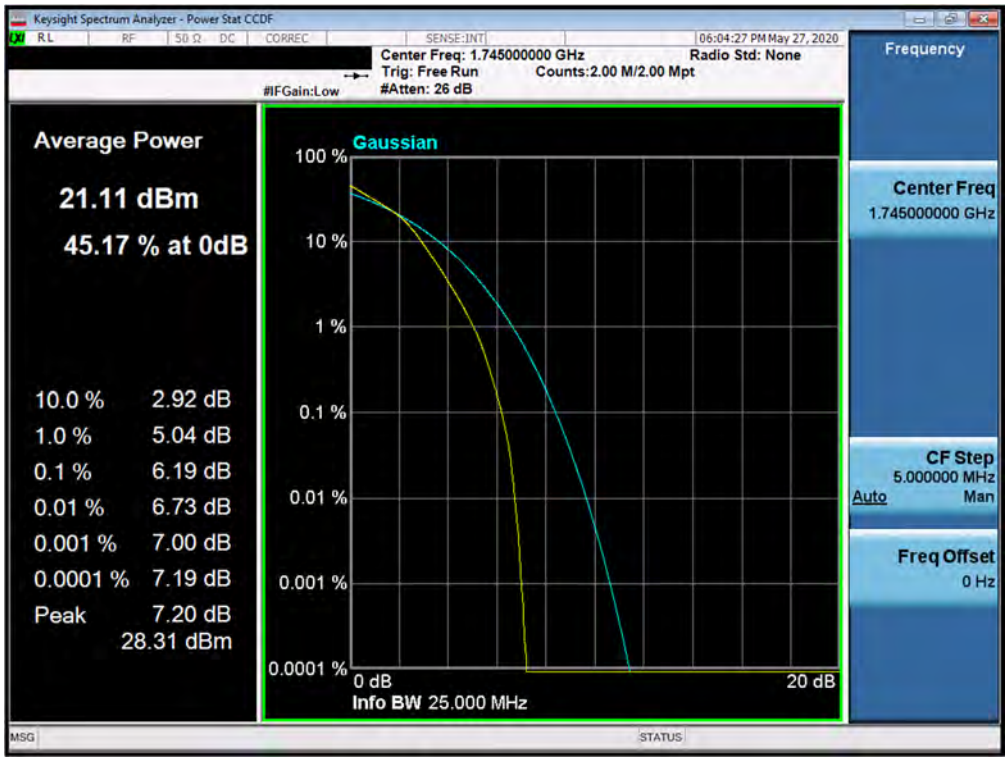
Plot 7-512. PAR Plot (Band 66/4 - 15.0MHz 64-QAM - Full RB Configuration)



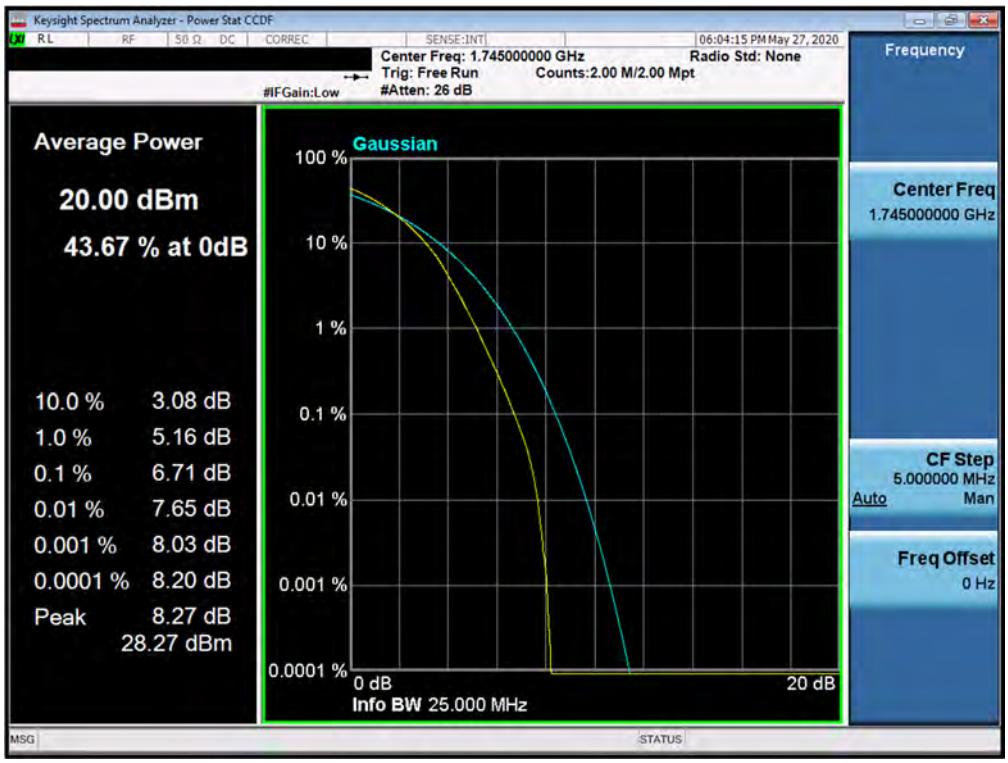
Plot 7-513. PAR Plot (Band 66/4 - 15.0MHz 256-QAM - Full RB Configuration)



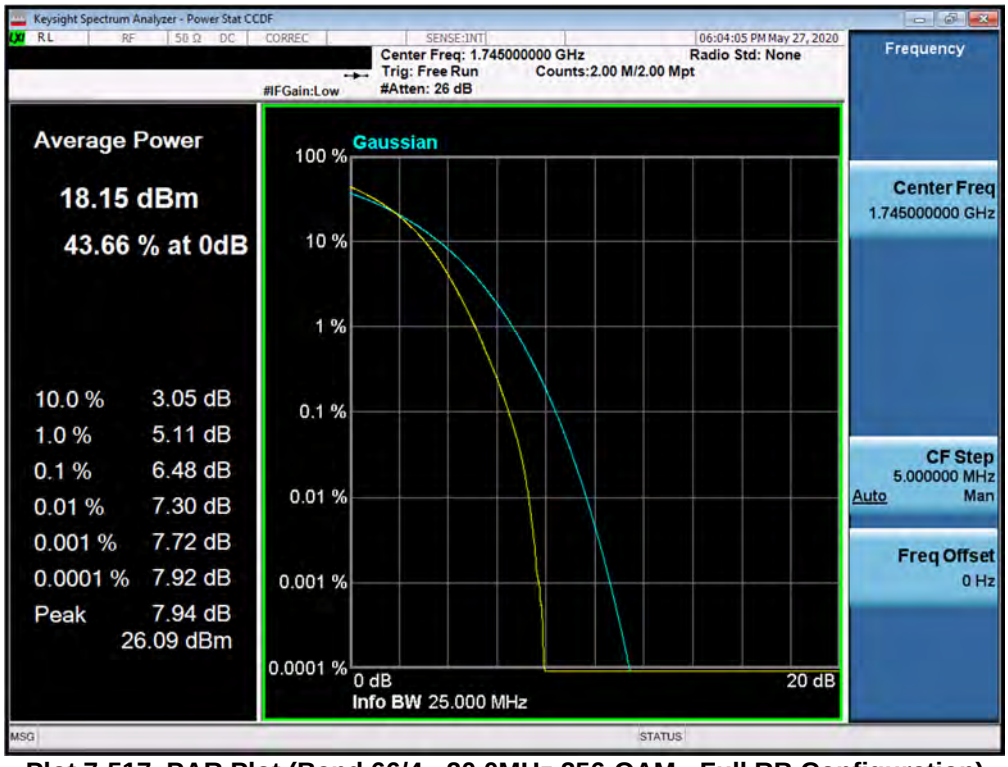
Plot 7-514. PAR Plot (Band 66/4 - 20.0MHz QPSK - Full RB Configuration)



Plot 7-515. PAR Plot (Band 66/4 - 20.0MHz 16-QAM - Full RB Configuration)

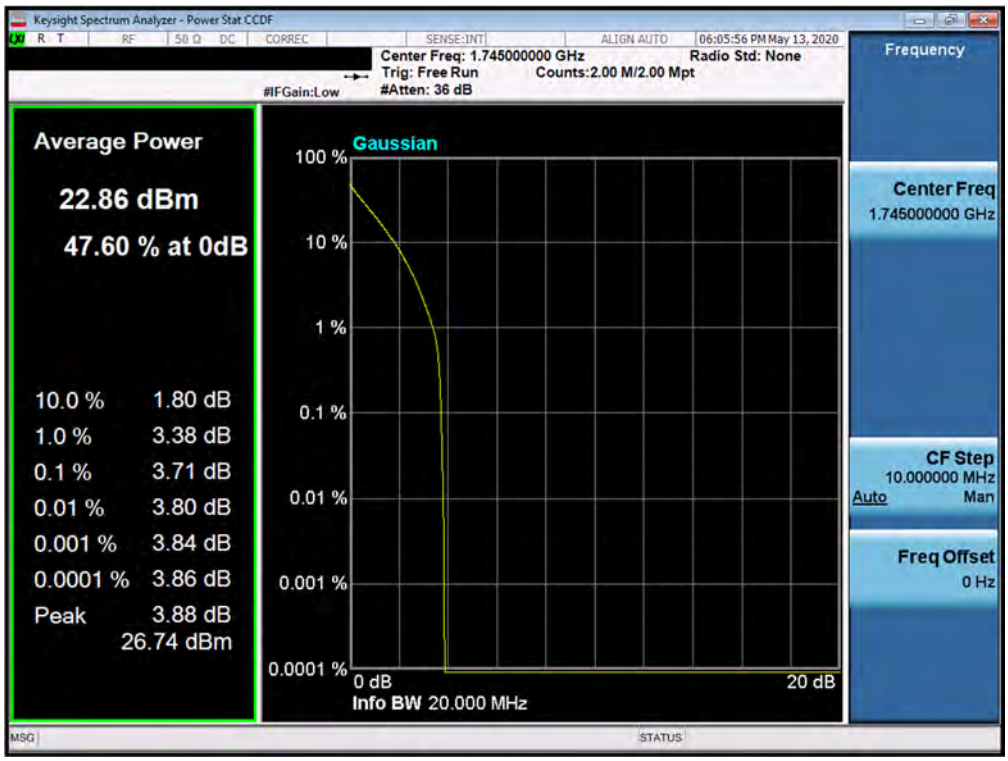


Plot 7-516. PAR Plot (Band 66/4 - 20.0MHz 64-QAM - Full RB Configuration)

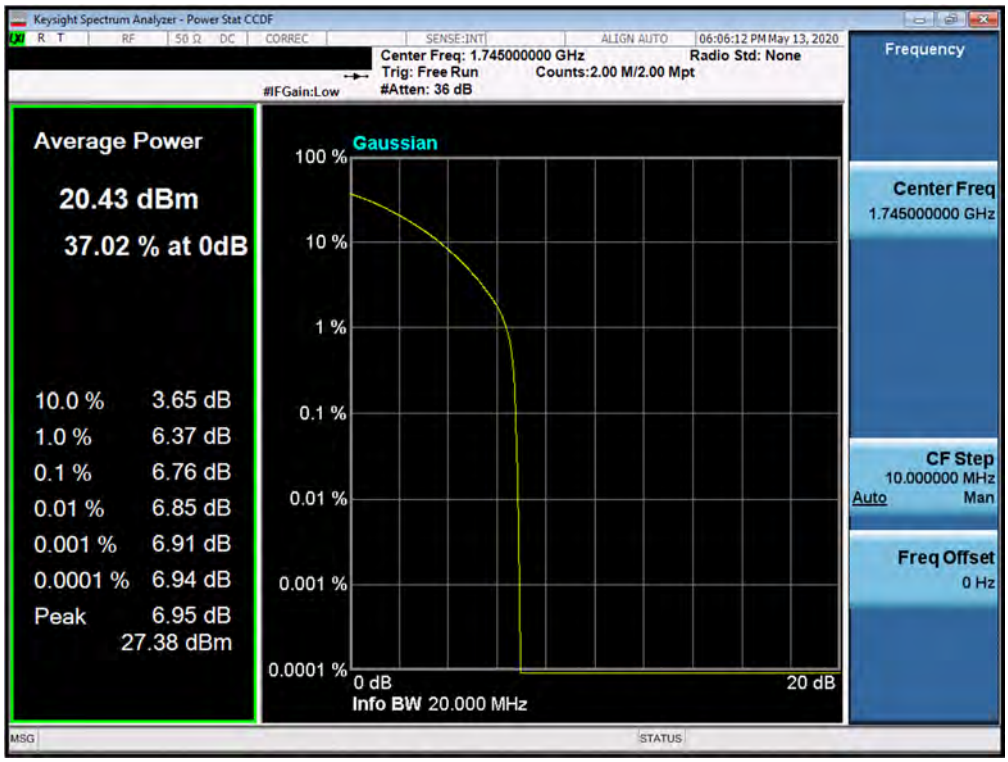


Plot 7-517. PAR Plot (Band 66/4 - 20.0MHz 256-QAM - Full RB Configuration)

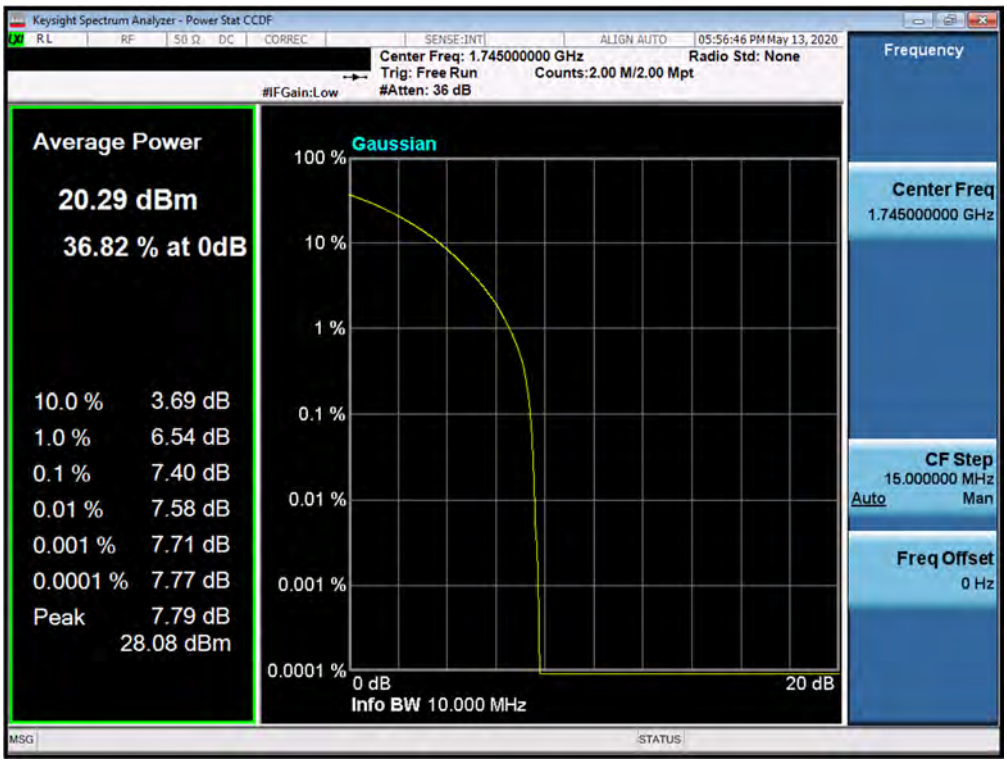
NR Band n66



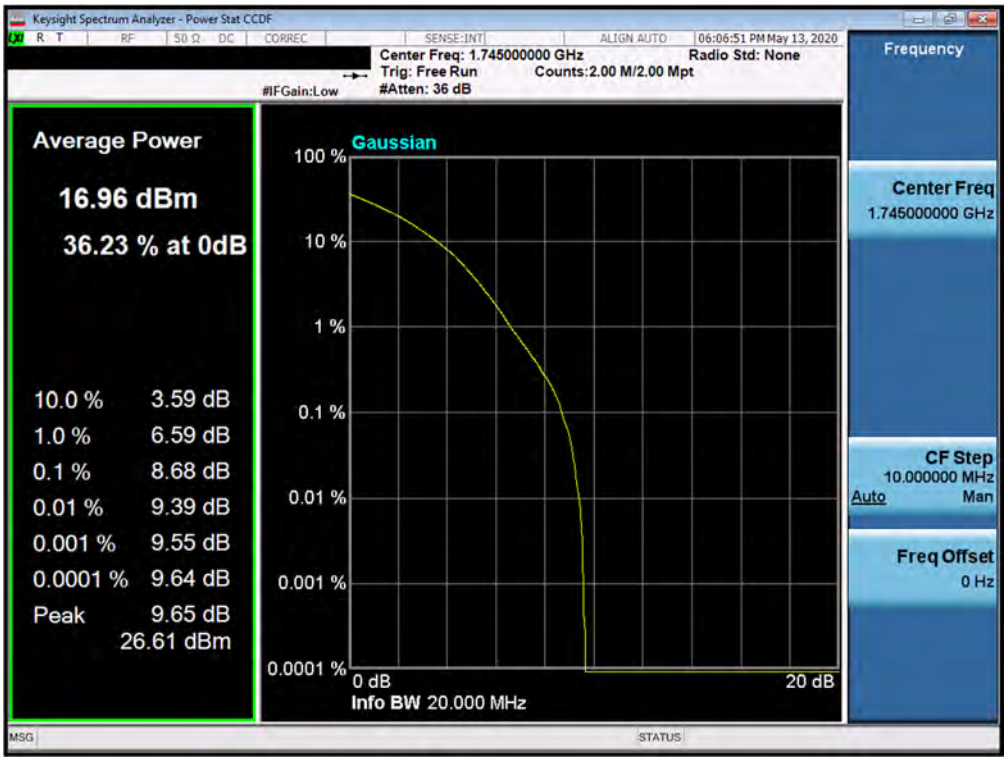
Plot 7-518. PAR Plot (n66 - 5.0MHz DFT-s-OFDM BPSK - Full RB Configuration)



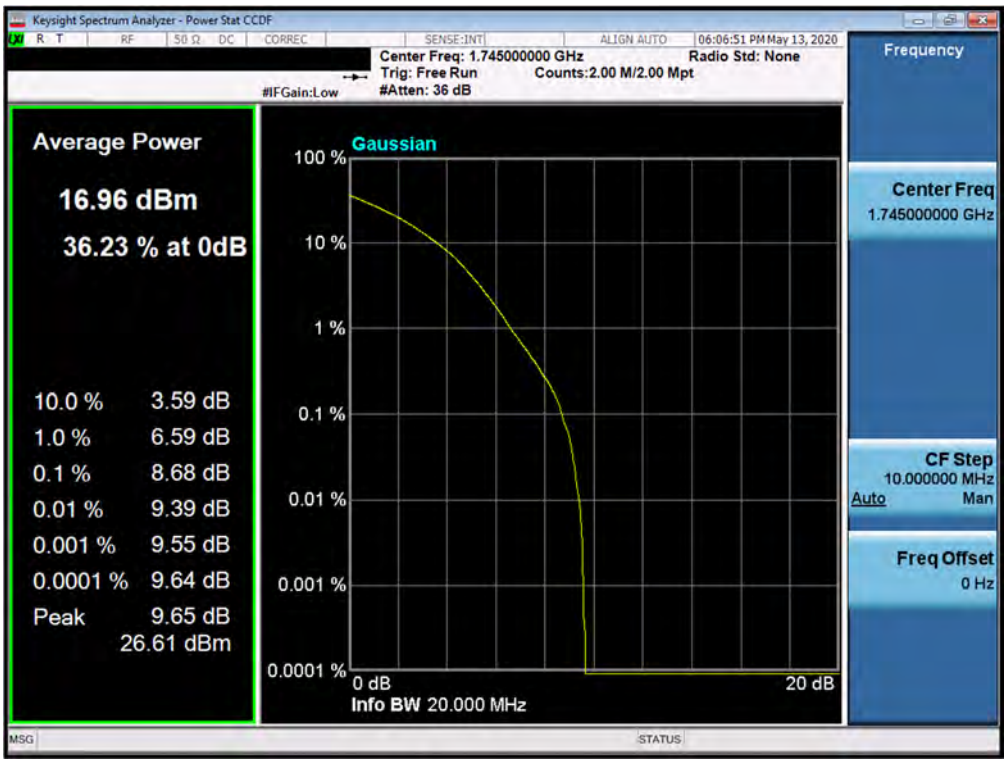
Plot 7-519. PAR Plot (n66 - 5.0MHz CP-OFDM-QPSK - Full RB Configuration)



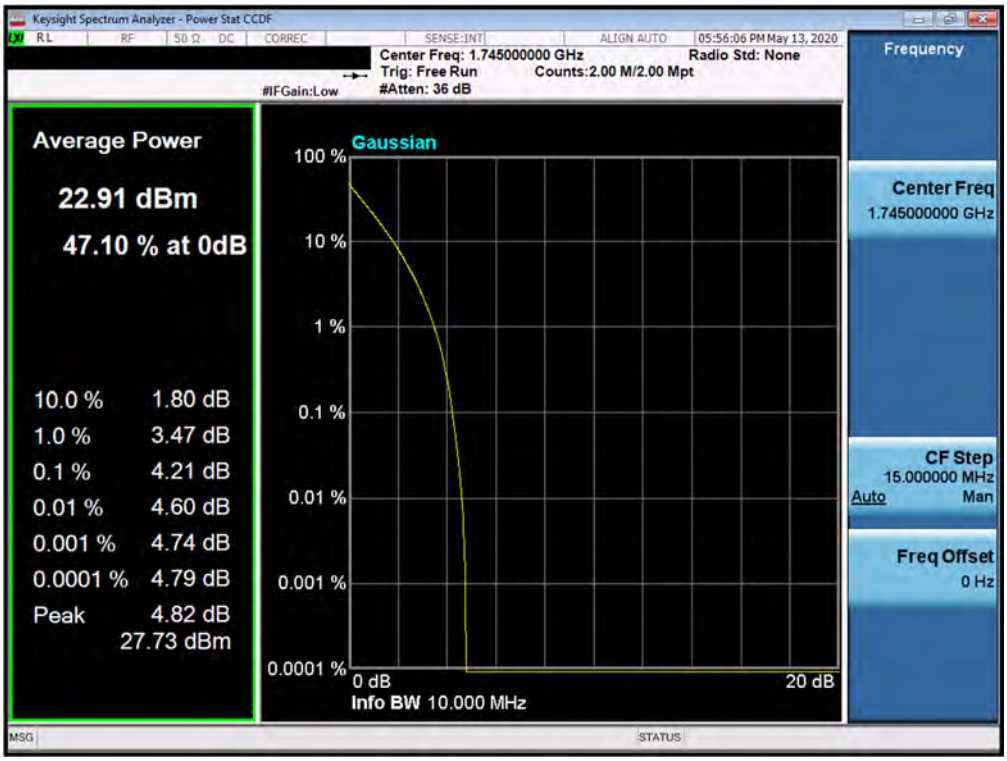
Plot 7-520. PAR Plot (n66 - 5.0MHz CP-OFDM-16-QAM - Full RB Configuration)



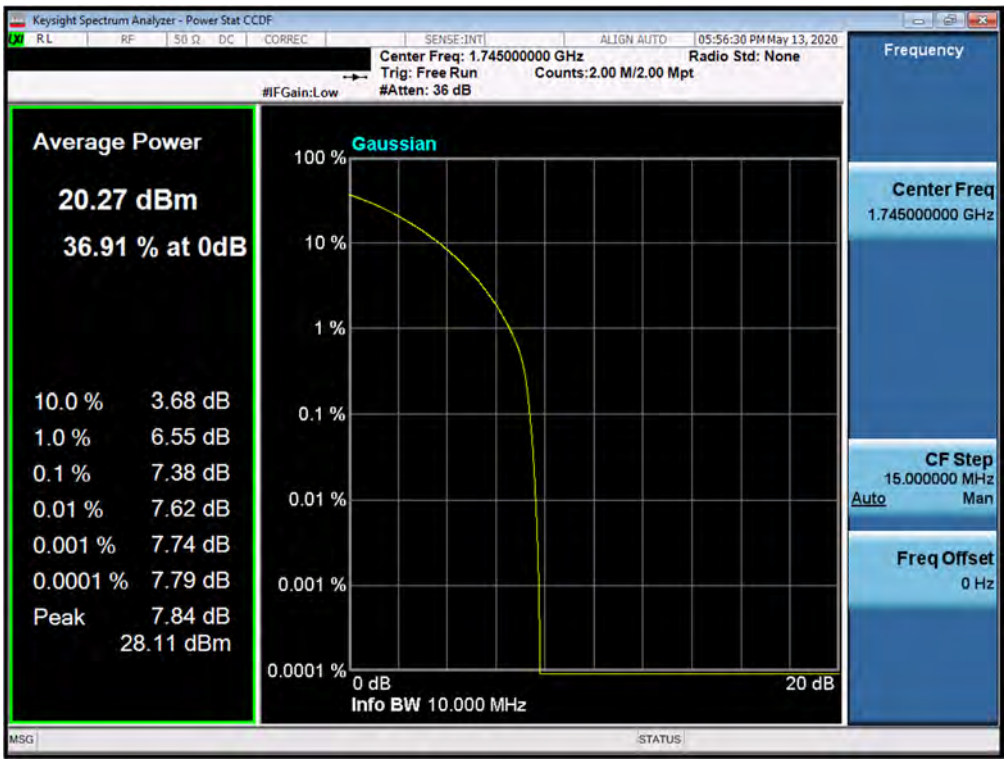
Plot 7-521. PAR Plot (n66 - 5.0MHz CP-OFDM-64-QAM - Full RB Configuration)



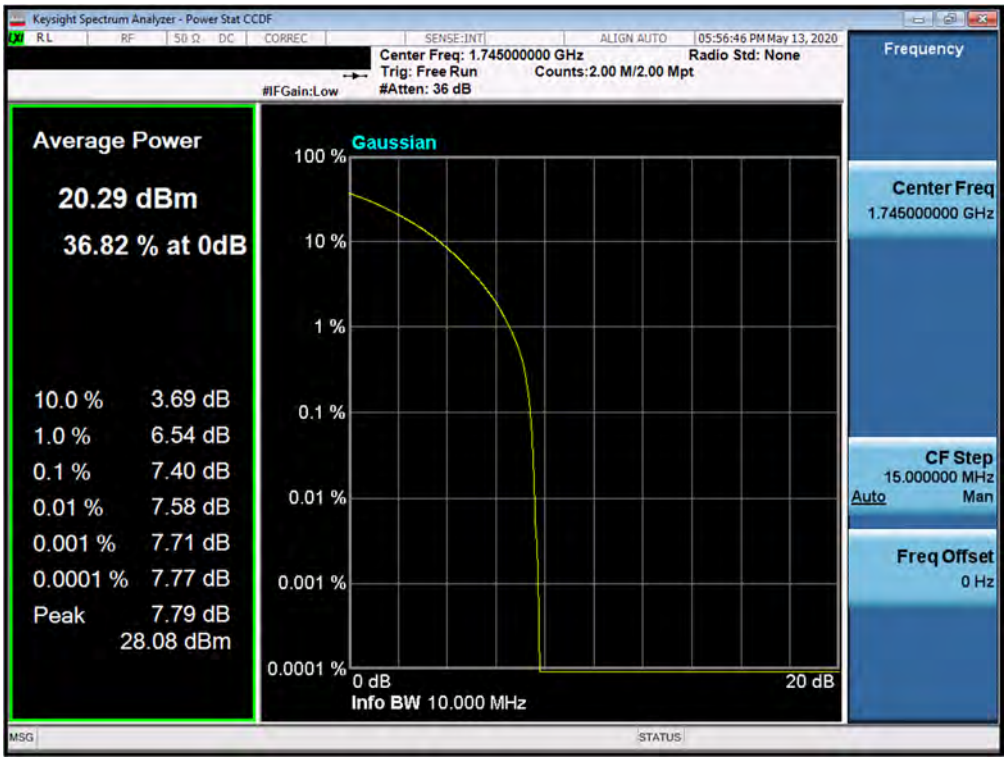
Plot 7-522. PAR Plot (n66 - 5.0MHz CP-OFDM-256-QAM - Full RB Configuration)



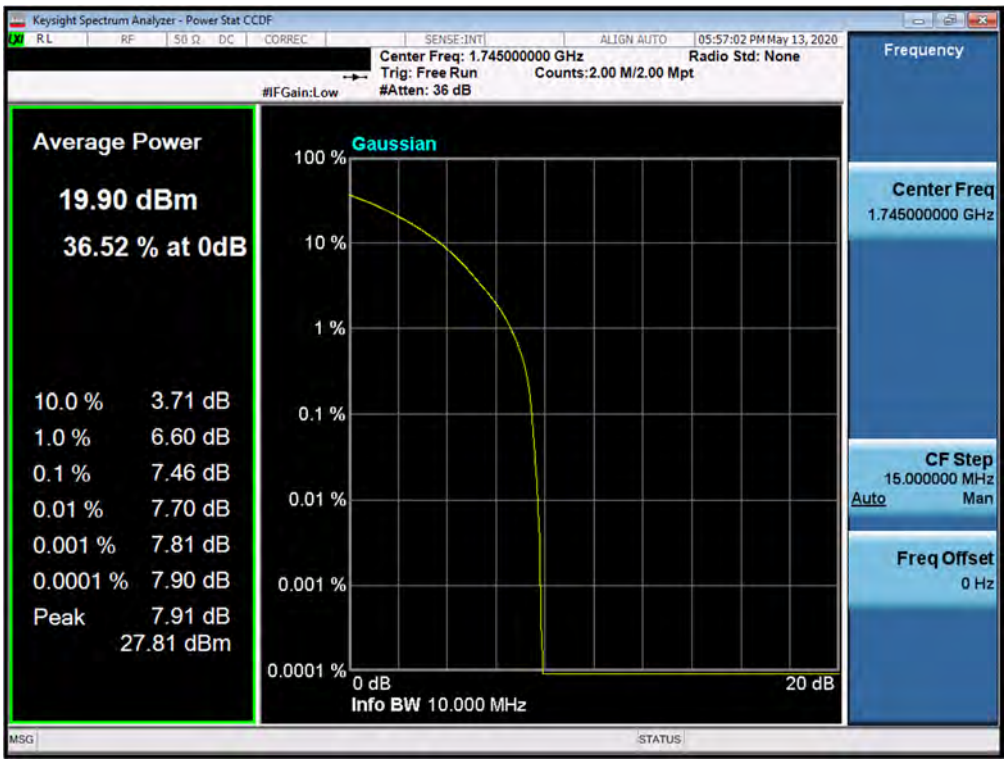
Plot 7-523. PAR Plot (n66 - 10.0MHz DFT-s-OFDM BPSK - Full RB Configuration)



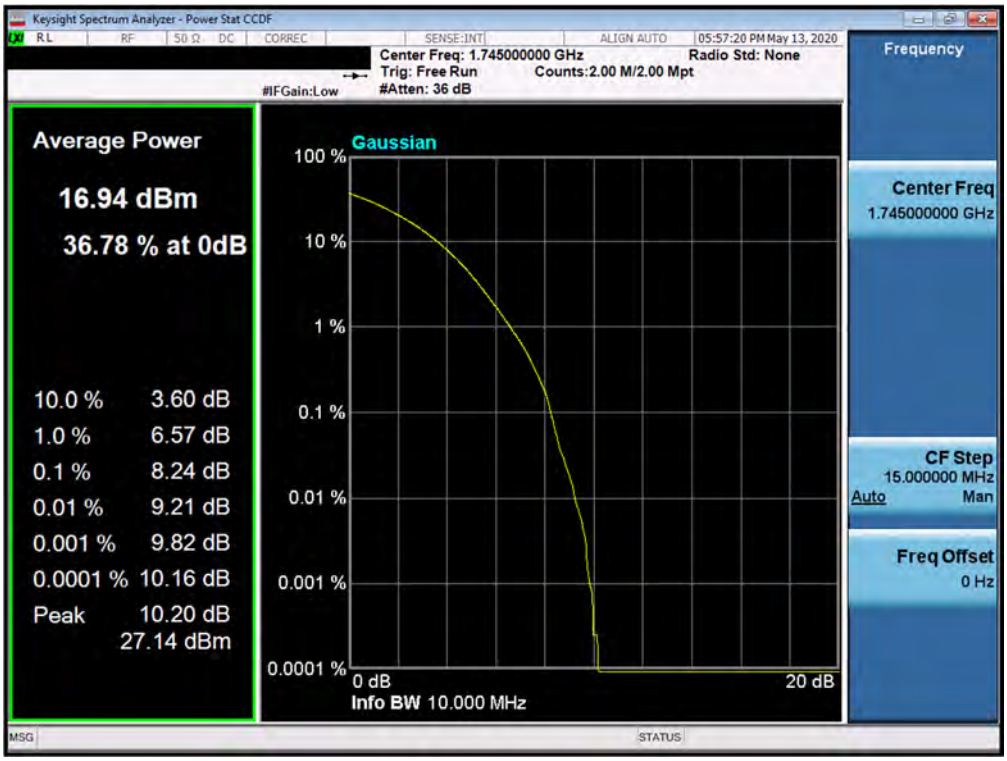
Plot 7-524. PAR Plot (n66 - 10.0MHz CP-OFDM-QPSK - Full RB Configuration)



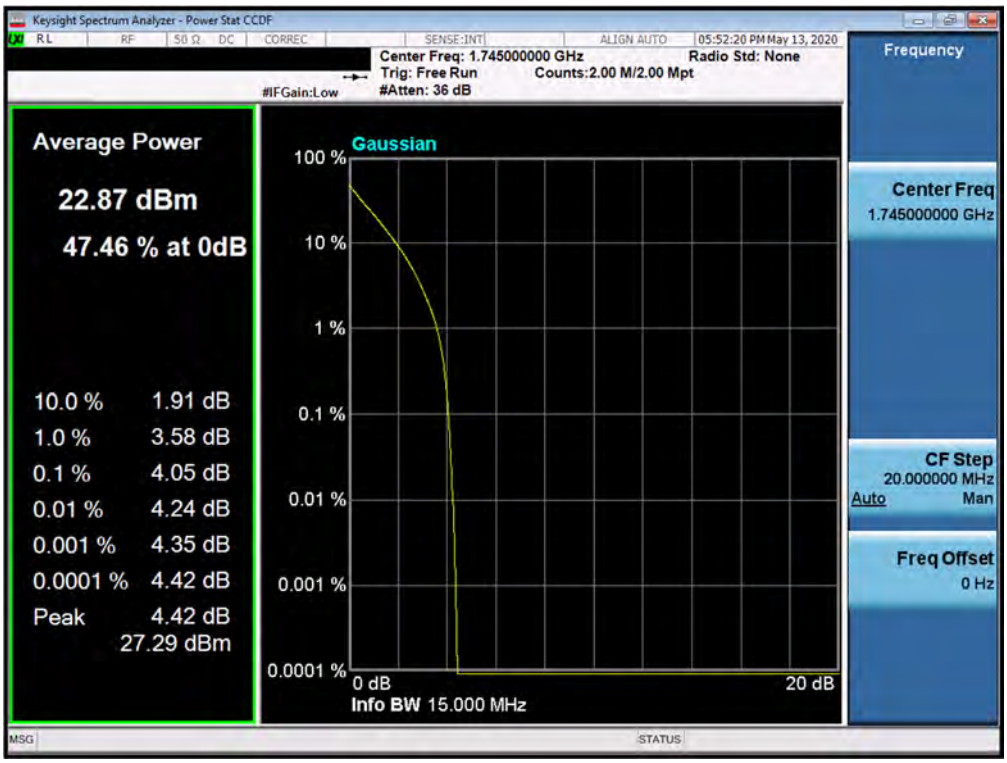
Plot 7-525. PAR Plot (n66 - 10.0MHz CP-OFDM-16-QAM - Full RB Configuration)



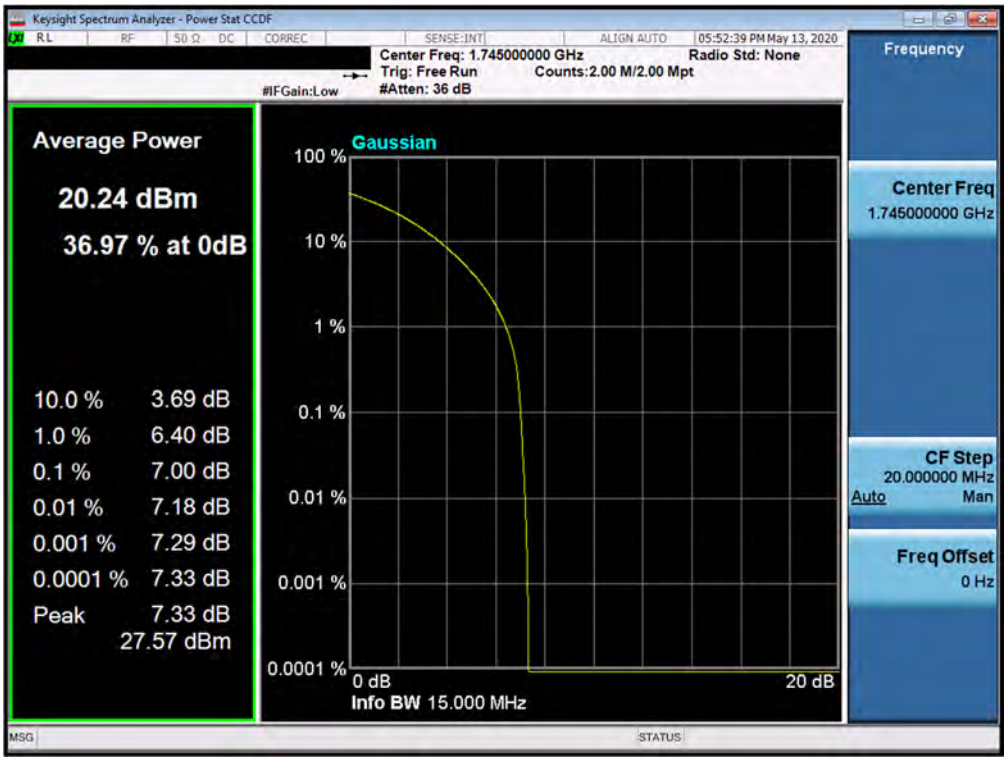
Plot 7-526. PAR Plot (n66 - 10.0MHz CP-OFDM-64-QAM - Full RB Configuration)



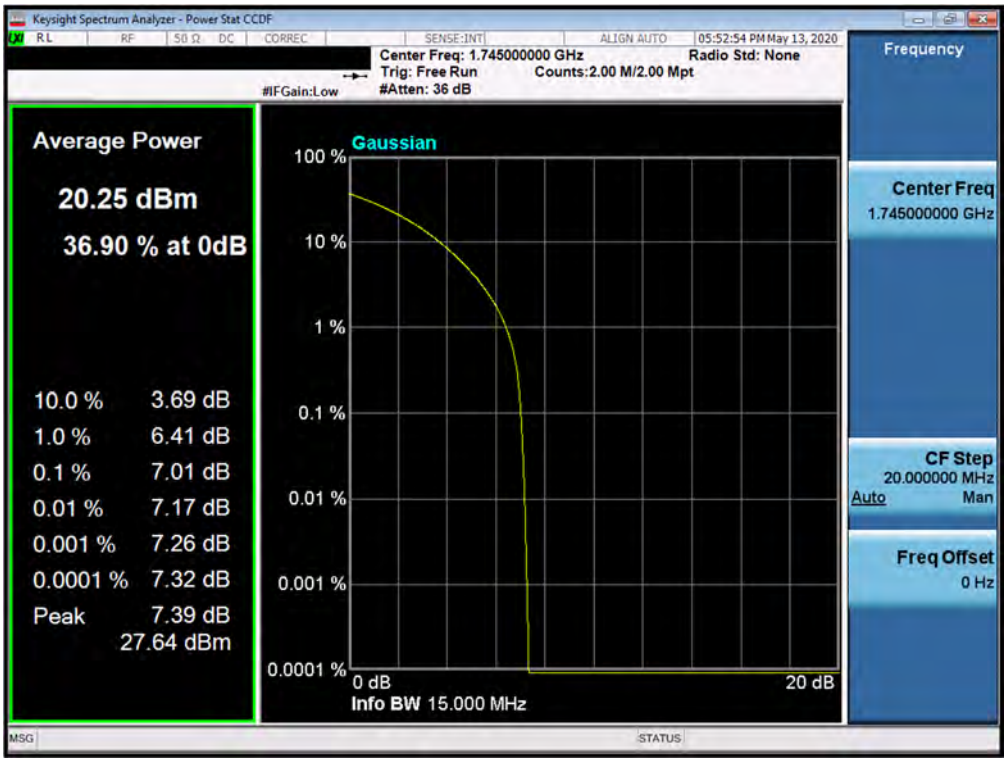
Plot 7-527. PAR Plot (n66 - 10.0MHz CP-OFDM-256-QAM - Full RB Configuration)



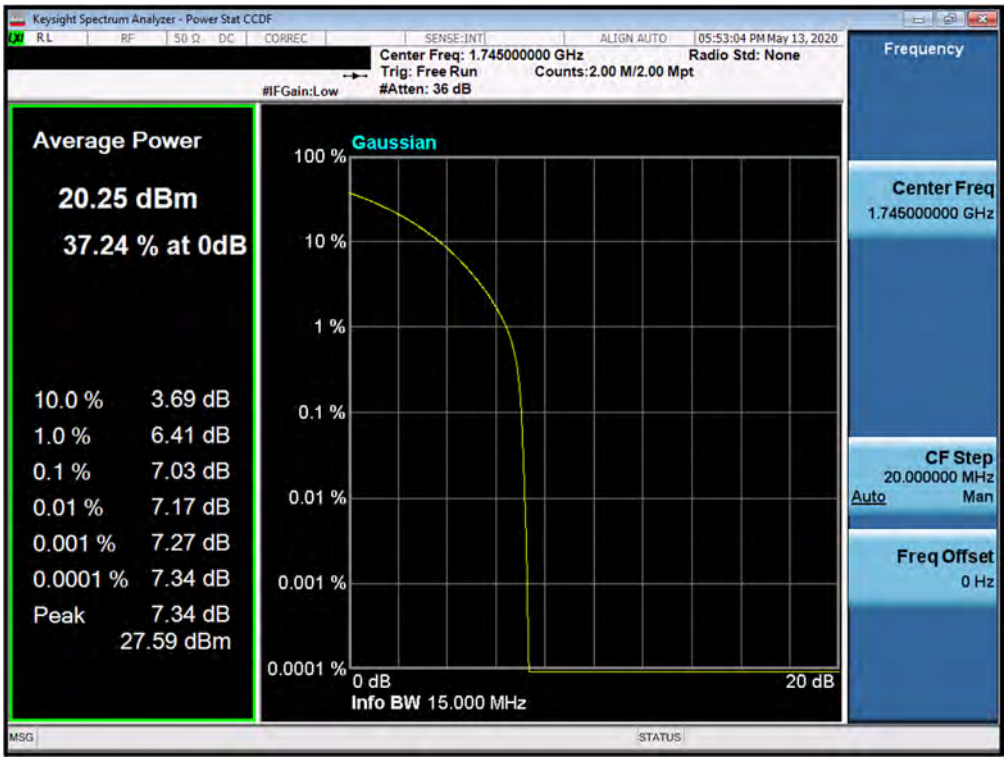
Plot 7-528. PAR Plot (n66 - 15.0MHz DFT-s-OFDM BPSK - Full RB Configuration)



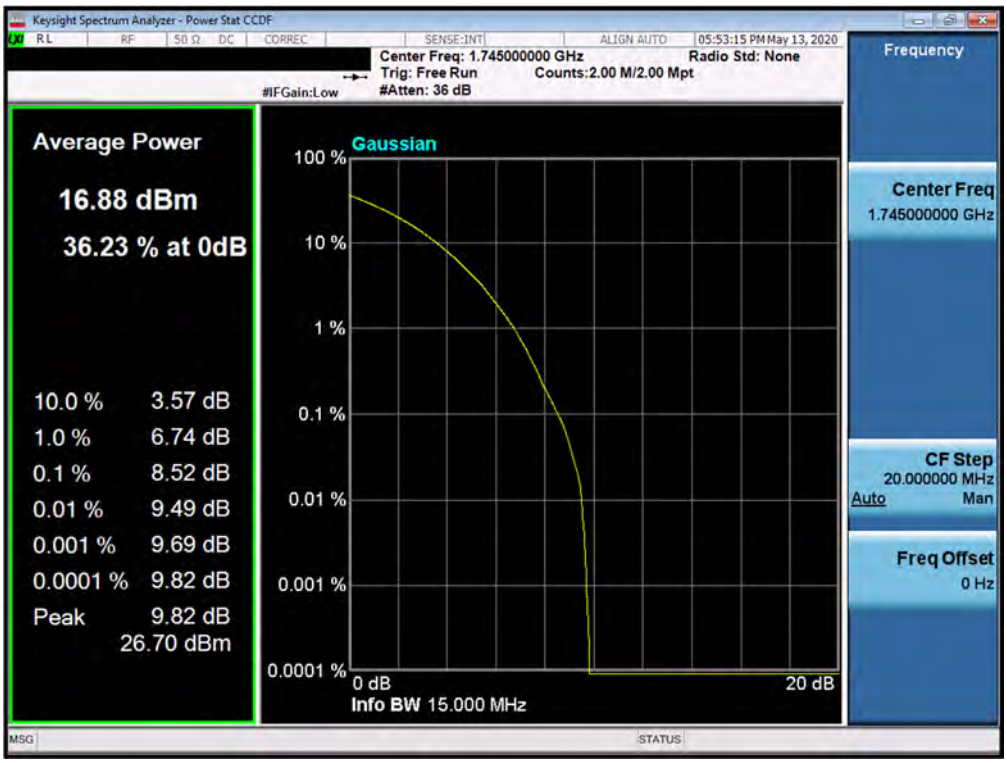
Plot 7-529. PAR Plot (n66 - 15.0MHz CP-OFDM-QPSK - Full RB Configuration)



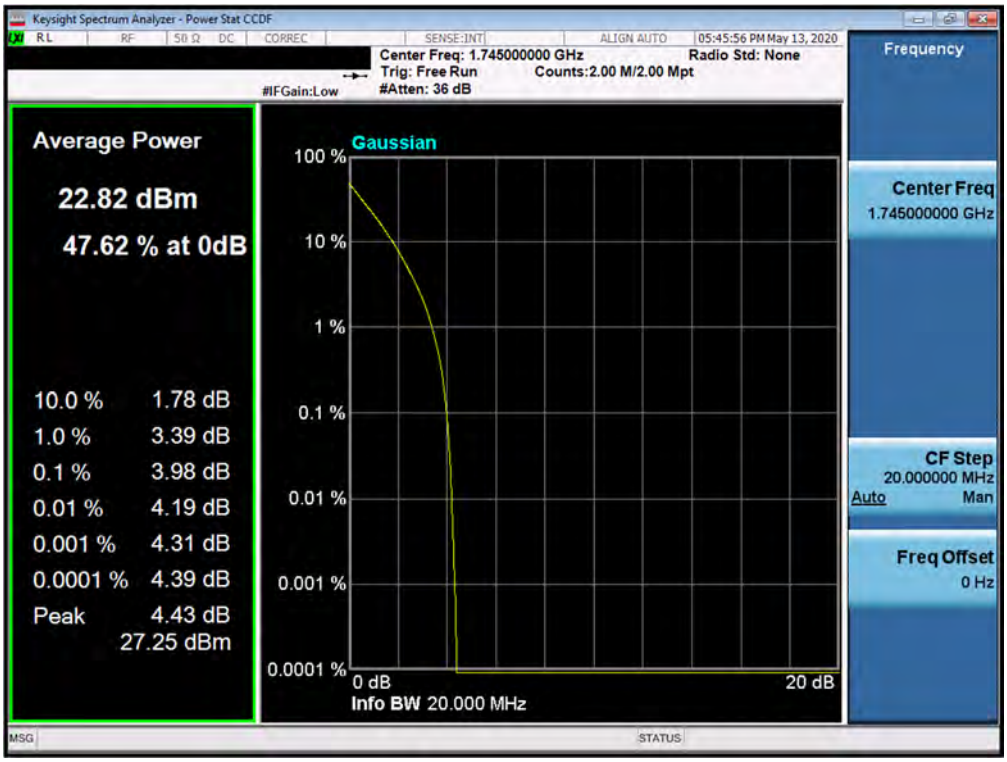
Plot 7-530. PAR Plot (n66 - 15.0MHz CP-OFDM-16-QAM - Full RB Configuration)



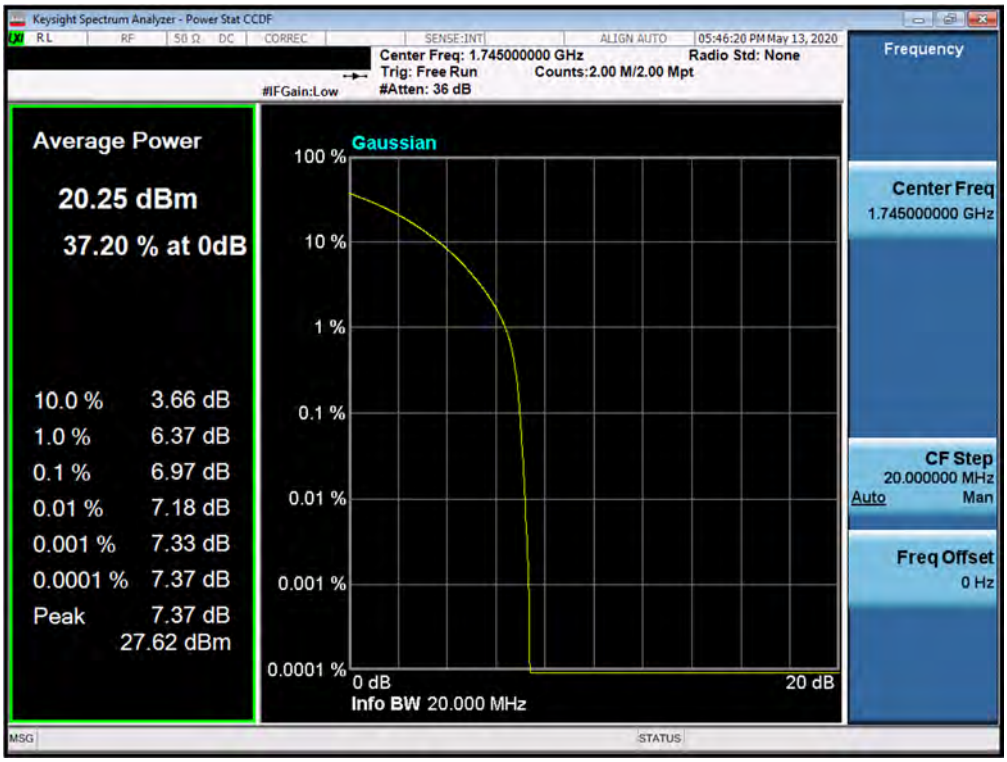
Plot 7-531. PAR Plot (n66 - 15.0MHz CP-OFDM-64-QAM - Full RB Configuration)



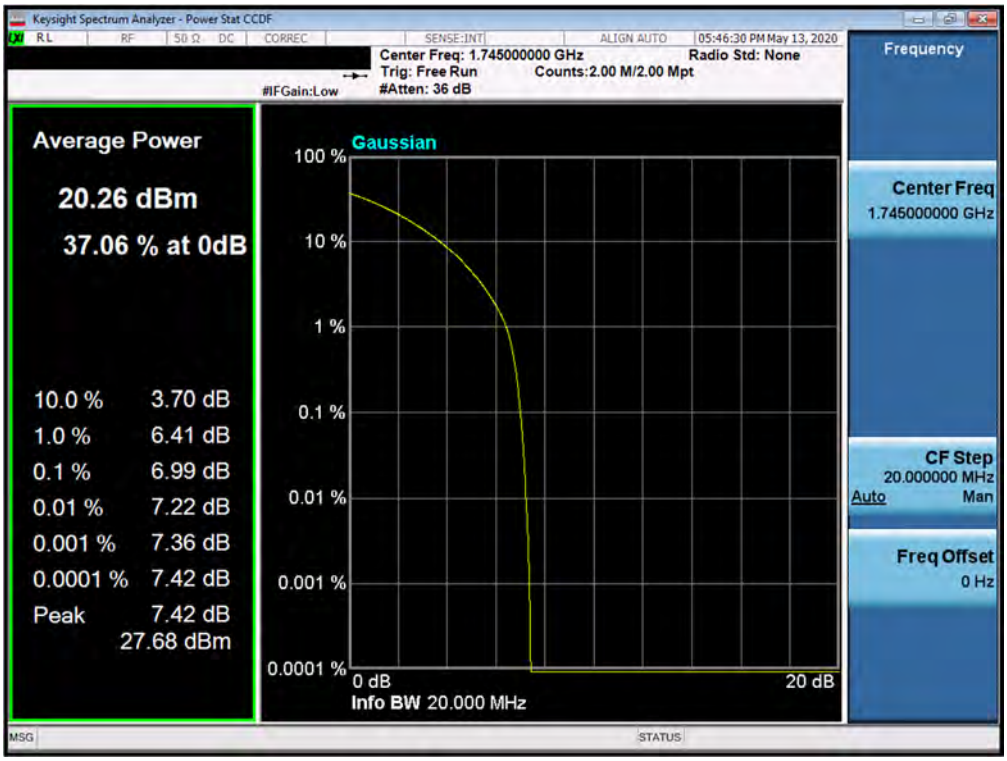
Plot 7-532. PAR Plot (n66 - 15.0MHz CP-OFDM-256-QAM - Full RB Configuration)



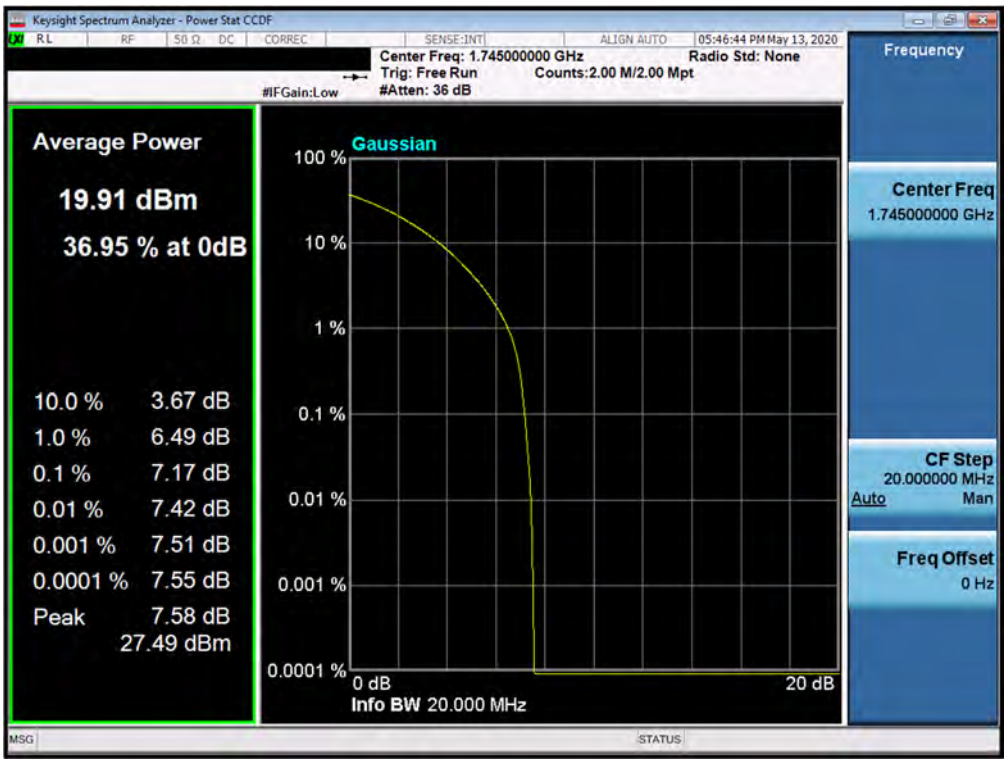
Plot 7-533. PAR Plot (n66 - 20.0MHz DFT-s-OFDM BPSK - Full RB Configuration)



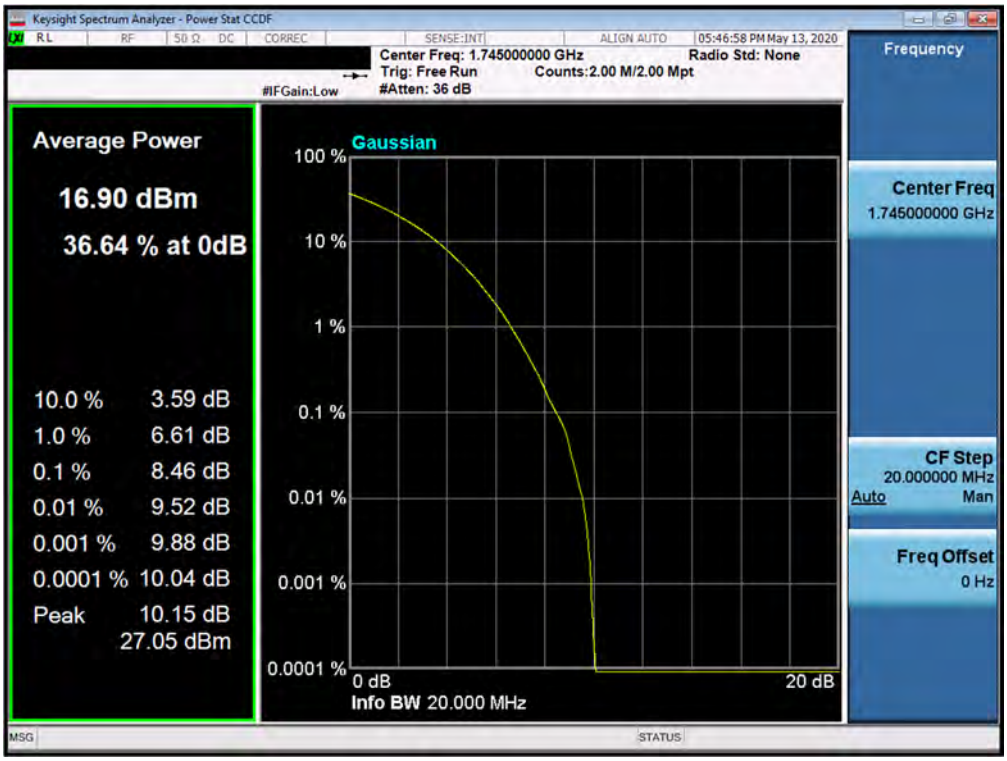
Plot 7-534. PAR Plot (n66 - 20.0MHz CP-OFDM-QPSK - Full RB Configuration)



Plot 7-535. PAR Plot (n66 - 20.0MHz CP-OFDM-16-QAM - Full RB Configuration)



Plot 7-536. PAR Plot (n66 - 20.0MHz CP-OFDM-64-QAM - Full RB Configuration)



Plot 7-537. PAR Plot (n66 - 20.0MHz CP-OFDM-256-QAM - Full RB Configuration)

7.6 Radiated Power (ERP/EIRP)

Test Overview

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.2.1

ANSI/TIA-603-E-2016 – Section 2.2.17

Test Settings

1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
2. RBW = 1 – 5% of the expected OBW, not to exceed 1MHz
3. VBW ≥ 3 x RBW
4. Span = 1.5 times the OBW
5. No. of sweep points ≥ 2 x span / RBW
6. Detector = RMS
7. Trigger is set to "free run" for signals with continuous operation with the sweep times set to "auto".
8. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with continuous operation.
9. Trace mode = trace averaging (RMS) over 100 sweeps
10. The trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

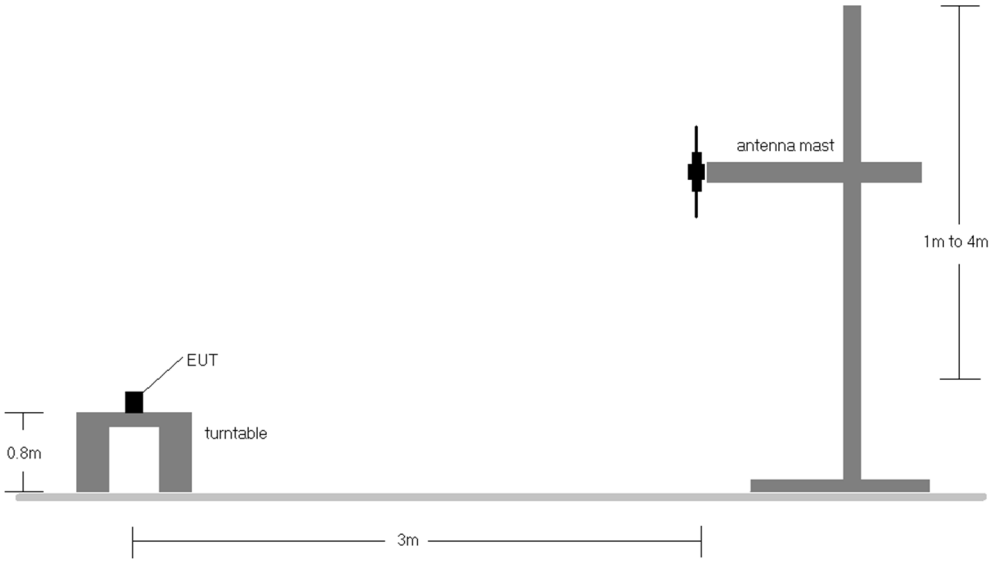


Figure 7-5. Radiated Test Setup <1GHz

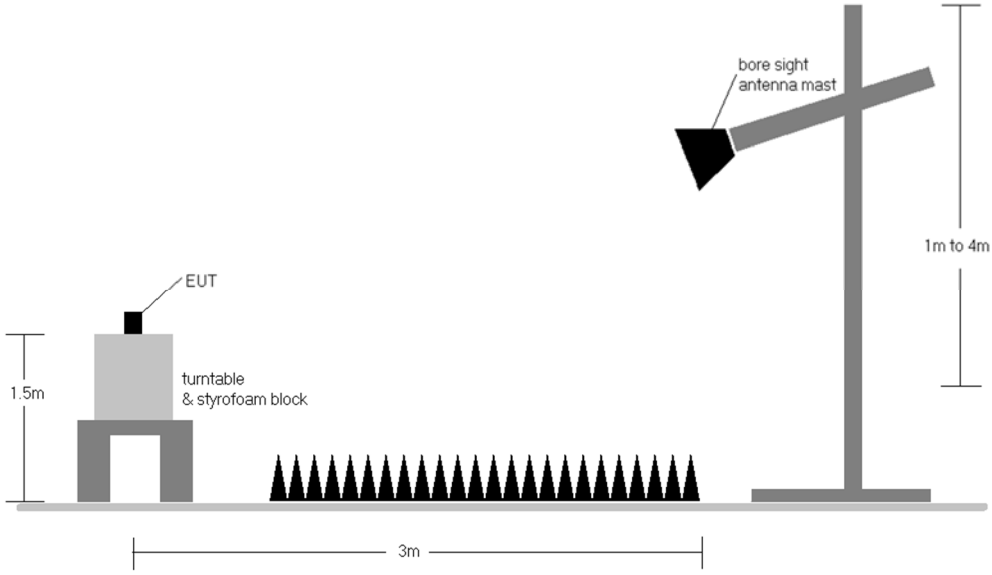


Figure 7-6. Radiated Test Setup >1GHz

Test Notes

1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

2) This unit was tested with its standard battery.

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
665.50	5	QPSK	V	184	127	12 / 6	16.62	3.79	**18.26**	**0.067**	34.77	-16.51
680.50	5	QPSK	V	188	127	1 / 0	15.89	4.24	17.98	0.063	34.77	-16.80
695.50	5	QPSK	V	191	133	1 / 0	15.37	4.58	17.80	0.060	34.77	-16.98
680.50	5	16-QAM	V	188	127	1 / 0	14.94	4.24	**17.03**	0.050	34.77	-17.75
680.50	5	64-QAM	V	188	127	1 / 0	13.90	4.24	**15.99**	0.040	34.77	-18.79
680.50	5	256-QAM	V	188	127	1 / 0	10.22	4.24	12.31	0.017	34.77	-22.47
668.00	10	QPSK	V	177	122	25 / 12	15.89	3.82	17.56	0.057	34.77	-17.21
680.50	10	QPSK	V	174	117	1 / 0	15.87	4.24	**17.96**	0.062	34.77	-16.82
693.00	10	QPSK	V	133	127	1 / 0	15.36	4.44	17.65	0.058	34.77	-17.12
680.50	10	16-QAM	V	174	117	1 / 0	14.92	4.24	**17.01**	0.050	34.77	-17.77
680.50	10	64-QAM	V	174	117	1 / 0	13.93	4.24	**16.02**	0.040	34.77	-18.76
680.50	10	256-QAM	V	174	117	1 / 0	10.62	4.24	**12.71**	**0.019**	34.77	-22.07
670.50	15	QPSK	V	124	125	36 / 18	15.89	3.96	17.70	0.059	34.77	-17.07
680.50	15	QPSK	V	137	120	1 / 0	15.87	4.24	**17.96**	0.062	34.77	-16.82
690.50	15	QPSK	V	144	145	1 / 0	15.36	4.41	17.62	0.058	34.77	-17.15
680.50	15	16-QAM	V	137	120	1 / 0	14.92	4.24	**17.01**	0.050	34.77	-17.77
680.50	15	64-QAM	V	137	120	1 / 0	13.93	4.24	**16.02**	0.040	34.77	-18.76
680.50	15	256-QAM	V	137	120	1 / 0	10.62	4.24	**12.71**	**0.019**	34.77	-22.07
673.00	20	QPSK	V	188	124	50 / 25	15.89	4.09	17.83	0.061	34.77	-16.94
680.50	20	QPSK	V	183	110	1 / 0	15.87	4.24	**17.96**	0.062	34.77	-16.82
688.00	20	QPSK	V	193	121	1 / 0	15.36	4.48	17.69	0.059	34.77	-17.08
680.50	20	16-QAM	V	183	110	1 / 0	14.92	4.24	**17.01**	0.050	34.77	-17.77
680.50	20	64-QAM	V	183	110	1 / 0	13.93	4.24	**16.02**	0.040	34.77	-18.76
680.50	20	256-QAM	V	183	110	1 / 0	10.62	4.24	**12.71**	**0.019**	34.77	-22.07
665.50	5	QPSK	H	254	119	12 / 6	14.71	4.24	16.80	0.048	34.77	-17.98
665.50	5 (WCP)	QPSK	V	189	201	12 / 6	15.06	4.24	17.15	0.052	34.77	-17.63

Table 7-3. ERP Data (Band 71)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
20 MHz	π/2 BPSK	673.0	H	X	175.0	149.0	3.70	1 / 50	15.45	19.15	0.082	36.99	-17.84	17.00	0.050	34.77	-17.77
		680.5	H	X	175.0	149.0	3.70	1 / 50	15.78	**19.48**	0.089	36.99	-17.51	**17.33**	0.054	34.77	-17.44
		688.0	H	X	175.0	149.0	3.70	1 / 50	15.60	19.30	0.085	36.99	-17.69	17.15	0.052	34.77	-17.62
	QPSK	673.0	H	X	175.0	149.0	3.70	1 / 50	14.13	17.83	0.061	36.99	-19.16	15.68	0.037	34.77	-19.09
		680.5	H	X	175.0	149.0	3.70	1 / 50	14.19	**17.89**	0.062	36.99	-19.10	**15.74**	0.037	34.77	-19.03
		688.0	H	X	175.0	149.0	3.70	1 / 50	14.18	17.88	0.061	36.99	-19.11	15.73	0.037	34.77	-19.04
	16-QAM	680.5	H	X	175.0	149.0	3.70	1 / 50	13.16	**16.86**	0.049	36.99	-20.13	**14.71**	0.030	34.77	-20.06
	64-QAM	680.5	H	X	175.0	149.0	3.70	1 / 50	12.24	**15.94**	0.039	36.99	-21.05	**13.79**	0.024	34.77	-20.98
	256-QAM	680.5	H	X	175.0	149.0	3.70	1 / 50	11.30	**15.00**	0.032	36.99	-21.99	**12.85**	0.019	34.77	-21.92
15 MHz	π/2 BPSK	670.5	H	X	175.0	149.0	3.70	0.02	15.41	19.11	0.081	36.99	-17.88	16.96	0.050	34.77	-17.81
		680.5	H	X	175.0	149.0	3.70	1/50	15.73	**19.43**	0.088	36.99	-17.56	**17.28**	0.053	34.77	-17.49
		690.5	H	X	175.0	149.0	3.70	1/50	15.57	19.27	0.085	36.99	-17.72	17.12	0.052	34.77	-17.65
	QPSK	670.5	H	X	175.0	149.0	0.00	1/68	17.93	**17.93**	0.062	36.99	-19.06	**15.78**	0.038	34.77	-18.99
		680.5	H	X	175.0	149.0	3.70	1/50	14.17	17.87	0.061	36.99	-19.12	15.72	0.037	34.77	-19.05
		690.5	H	X	175.0	149.0	0.00	1/70	17.88	17.88	0.061	36.99	-19.11	15.73	0.037	34.77	-19.04
	16-QAM	680.5	H	X	175.0	149.0	3.70	1/50	13.05	**16.75**	0.047	36.99	-20.24	**14.60**	0.029	34.77	-20.17
	64-QAM	680.5	H	X	175.0	149.0	3.70	1/50	12.24	**15.94**	0.039	36.99	-21.05	**13.79**	0.024	34.77	-20.98
	256-QAM	680.5	H	X	175.0	149.0	3.70	1/50	11.32	**15.02**	0.032	36.99	-21.97	**12.87**	0.019	34.77	-21.90
10 MHz	π/2 BPSK	668.0	H	X	175.0	149.0	3.70	1/50	15.29	18.99	0.079	36.99	-18.00	16.84	0.048	34.77	-17.93
		680.5	H	X	175.0	149.0	3.70	1/50	15.77	**19.47**	0.089	36.99	-17.52	**17.32**	0.054	34.77	-17.45
		693.0	H	X	175.0	149.0	3.70	1/50	15.67	19.37	0.086	36.99	-17.62	17.22	0.053	34.77	-17.55
	QPSK	668.0	H	X	175.0	149.0	0.00	1/50	17.80	17.80	0.060	36.99	-19.19	15.65	0.037	34.77	-19.12
		680.5	H	X	175.0	149.0	3.70	1/50	14.18	**17.88**	0.061	36.99	-19.11	**15.73**	0.037	34.77	-19.04
		693.0	H	X	175.0	149.0	0.00	1/50	17.84	17.84	0.061	36.99	-19.15	15.69	0.037	34.77	-19.08
	16-QAM	680.5	H	X	175.0	149.0	3.70	1/50	12.87	**16.57**	0.045	36.99	-20.42	**14.42**	0.028	34.77	-20.35
	64-QAM	680.5	H	X	175.0	149.0	3.70	1/50	11.74	**15.44**	0.035	36.99	-21.55	**13.29**	0.021	34.77	-21.48
	256-QAM	680.5	H	X	175.0	149.0	3.70	1/50	12.03	**15.73**	0.037	36.99	-21.26	**13.58**	0.023	34.77	-21.19
5 MHz	π/2 BPSK	665.5	H	X	175.0	149.0	3.70	1/50	15.41	19.11	0.081	36.99	-17.88	16.96	0.050	34.77	-17.81
		680.5	H	X	175.0	149.0	3.70	1/50	15.78	**19.48**	0.089	36.99	-17.51	**17.33**	0.054	34.77	-17.44
		695.5	H	X	175.0	149.0	3.70	1/50	15.68	19.38	0.087	36.99	-17.61	17.23	0.053	34.77	-17.54
	QPSK	665.5	H	X	175.0	149.0	0.00	1/50	17.94	17.94	0.062	36.99	-19.05	15.79	0.038	34.77	-18.98
		680.5	H	X	175.0	149.0	3.70	1/50	14.20	17.90	0.062	36.99	-19.09	15.75	0.038	34.77	-19.02
		695.5	H	X	175.0	149.0	0.00	1/50	18.04	**18.04**	0.064	36.99	-18.95	**15.89**	0.039	34.77	-18.88
	16-QAM	680.5	H	X	175.0	149.0	3.70	1/50	13.18	**16.88**	0.049	36.99	-20.11	**14.73**	0.030	34.77	-20.04
	64-QAM	680.5	H	X	175.0	149.0	3.70	1/50	12.37	**16.07**	0.040	36.99	-20.92	**13.92**	0.025	34.77	-20.85
	256-QAM	680.5	H	X	175.0	149.0	3.70	1/50	12.82	16.52	0.045	36.99	-20.47	14.37	0.027	34.77	-20.40
	QPSK (CP-OFDM)	680.5	H	X	124.0	31.0	3.70	1 / 37	14.10	**17.80**	0.060	36.99	-19.19	**15.65**	0.037	34.77	-19.12
	QPSK (Opposite Pol.)	680.5	V	Z	101.0	75.0	3.70	1 / 37	14.42	18.12	0.065	36.99	-18.87	15.97	0.040	34.77	-18.80

Table 7-4. ERP Data (Band n71)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
699.70	1.4	QPSK	V	167	132	1 / 5	14.72	4.56	17.13	0.052	34.77	-17.64	19.28	0.085	36.99	-17.71
707.50	1.4	QPSK	V	177	124	1 / 5	14.70	4.62	**17.17**	0.052	34.77	-17.60	**19.32**	0.086	36.99	-17.67
715.30	1.4	QPSK	V	166	120	1 / 5	14.47	4.72	17.04	0.051	34.77	-17.73	19.19	0.083	36.99	-17.80
707.50	1.4	16-QAM	V	177	124	1 / 5	13.66	4.62	**16.13**	0.041	34.77	-18.64	**18.28**	0.067	36.99	-18.71
707.50	1.4	64-QAM	V	177	124	1 / 5	12.99	4.62	**15.46**	0.035	34.77	-19.31	**17.61**	0.058	36.99	-19.38
707.50	1.4	256-QAM	V	177	124	1 / 5	9.78	4.62	**12.25**	**0.017**	34.77	-22.52	**14.40**	**0.028**	36.99	-22.59
700.50	3	QPSK	V	170	122	1 / 14	14.85	4.59	**17.29**	0.054	34.77	-17.48	**19.44**	0.088	36.99	-17.55
707.50	3	QPSK	V	177	144	1 / 14	14.72	4.62	17.19	0.052	34.77	-17.58	19.34	0.086	36.99	-17.65
714.50	3	QPSK	V	165	131	1 / 14	14.61	4.71	17.17	0.052	34.77	-17.60	19.32	0.086	36.99	-17.67
707.50	3	16-QAM	V	177	144	1 / 14	14.31	4.62	**16.78**	0.048	34.77	-17.99	**18.93**	0.078	36.99	-18.06
707.50	3	64-QAM	V	177	144	1 / 14	12.65	4.62	**15.12**	0.033	34.77	-19.65	**17.27**	0.053	36.99	-19.72
707.50	3	256-QAM	V	177	144	1 / 14	9.81	4.62	**12.28**	**0.017**	34.77	-22.49	**14.43**	**0.028**	36.99	-22.56
701.50	5	QPSK	V	157	137	1 / 24	14.88	4.60	**17.33**	**0.054**	34.77	-17.44	**19.48**	**0.089**	36.99	-17.51
707.50	5	QPSK	V	158	120	1 / 24	14.78	4.62	17.25	0.053	34.77	-17.52	19.40	0.087	36.99	-17.59
713.50	5	QPSK	V	164	121	1 / 24	14.54	4.70	17.09	0.051	34.77	-17.68	19.24	0.084	36.99	-17.75
707.50	5	16-QAM	V	158	120	1 / 24	14.21	4.62	**16.68**	0.047	34.77	-18.09	**18.83**	0.076	36.99	-18.16
707.50	5	64-QAM	V	158	120	1 / 24	12.90	4.62	**15.37**	0.034	34.77	-19.40	**17.52**	0.056	36.99	-19.47
707.50	5	256-QAM	V	158	120	1 / 24	9.83	4.62	**12.30**	**0.017**	34.77	-22.47	**14.45**	**0.028**	36.99	-22.54
704.00	10	QPSK	V	169	126	1 / 49	14.63	4.58	17.06	0.051	34.77	-17.71	19.21	0.083	36.99	-17.78
707.50	10	QPSK	V	172	112	1 / 49	14.69	4.62	**17.16**	0.052	34.77	-17.61	**19.31**	0.085	36.99	-17.68
711.00	10	QPSK	V	161	117	1 / 49	14.55	4.67	17.07	0.051	34.77	-17.70	19.22	0.083	36.99	-17.77
707.50	10	16-QAM	V	172	112	1 / 49	13.57	4.62	**16.04**	0.040	34.77	-18.73	**18.19**	0.066	36.99	-18.80
707.50	10	64-QAM	V	172	112	1 / 49	12.46	4.62	**14.93**	0.031	34.77	-19.84	**17.08**	0.051	36.99	-19.91
707.50	10	256-QAM	V	172	112	1 / 49	10.80	4.62	**13.27**	**0.021**	34.77	-21.50	**15.42**	**0.035**	36.99	-21.57
701.50	5	QPSK	H	249	118	1 / 24	13.22	4.62	15.69	0.037	34.77	-19.08	17.84	0.061	36.99	-19.15
701.50	5 (WCP)	QPSK	V	147	159	1 / 24	13.56	4.62	16.03	0.040	34.77	-18.74	18.18	0.066	36.99	-18.81

Table 7-5. ERP Data (Band 12)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
779.50	5	QPSK	V	166	92	1 / 24	15.27	5.77	18.89	0.077	34.77	-15.89	21.04	0.127	36.99	-15.95
782.00	5	QPSK	V	161	98	1 / 24	15.31	5.79	**18.95**	0.079	34.77	-15.82	**21.10**	0.129	36.99	-15.89
784.50	5	QPSK	V	159	92	1 / 24	15.09	5.82	18.76	0.075	34.77	-16.01	20.91	0.123	36.99	-16.08
782.00	5	16-QAM	V	161	98	1 / 24	14.37	5.79	**18.01**	0.063	34.77	-16.76	**20.16**	0.104	36.99	-16.83
782.00	5	64-QAM	V	161	98	1 / 24	13.36	5.79	**17.00**	0.050	34.77	-17.77	**19.15**	0.082	36.99	-17.84
782.00	5	256-QAM	V	161	98	1 / 24	11.77	5.79	**15.41**	**0.035**	34.77	-19.36	**17.56**	**0.057**	36.99	-19.43
782.00	10	QPSK	V	158	86	1 / 0	15.71	5.79	**19.35**	**0.086**	34.77	-15.42	**21.50**	**0.141**	36.99	-15.49
782.00	10	16-QAM	V	158	86	1 / 0	14.81	5.79	**18.45**	0.070	34.77	-16.32	**20.60**	0.115	36.99	-16.39
782.00	10	64-QAM	V	158	86	1 / 0	13.62	5.79	**17.26**	0.053	34.77	-17.51	**19.41**	0.087	36.99	-17.58
782.00	10	256-QAM	V	158	86	1 / 0	12.67	5.79	**16.31**	**0.043**	34.77	-18.46	**18.46**	**0.070**	36.99	-18.53
782.00	10	QPSK	H	249	111	1 / 0	13.25	5.79	16.89	0.049	34.77	-17.88	19.04	0.080	36.99	-17.95
782.00	10 (WCP)	QPSK	V	162	78	1 / 0	14.53	5.79	18.17	0.066	34.77	-16.60	20.32	0.108	36.99	-16.67

Table 7-6. ERP Data (Band 13)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
824.70	1.4	QPSK	V	144	41	3 / 2	15.04	6.36	19.24	0.084	38.45	-19.21	21.39	0.138	40.61	-19.22
836.50	1.4	QPSK	V	133	80	3 / 2	15.79	6.38	**20.02**	0.100	38.45	-18.43	**22.17**	0.165	40.61	-18.44
848.30	1.4	QPSK	V	151	75	3 / 2	14.85	6.50	19.20	0.083	38.45	-19.25	21.35	0.136	40.61	-19.26
836.50	1.4	16-QAM	V	133	80	3 / 2	14.22	6.38	**18.45**	0.070	38.45	-20.00	**20.60**	0.115	40.61	-20.01
836.50	1.4	64-QAM	V	133	80	3 / 2	13.18	6.38	**17.41**	0.055	38.45	-21.04	**19.56**	0.090	40.61	-21.05
836.50	1.4	256-QAM	V	133	80	3 / 2	12.37	6.38	**16.60**	**0.046**	38.45	-21.85	**18.75**	**0.075**	40.61	-21.86
825.50	3	QPSK	V	133	80	8 / 4	15.53	6.36	19.75	0.094	38.45	-18.70	21.90	0.155	40.61	-18.71
836.50	3	QPSK	V	135	65	8 / 4	15.75	6.38	**19.98**	0.099	38.45	-18.47	**22.13**	0.163	40.61	-18.48
847.50	3	QPSK	V	133	66	8 / 4	14.83	6.49	19.17	0.083	38.45	-19.28	21.32	0.136	40.61	-19.28
836.50	3	16-QAM	V	135	65	8 / 4	14.18	6.38	**18.41**	0.069	38.45	-20.04	**20.56**	0.114	40.61	-20.05
836.50	3	64-QAM	V	135	65	8 / 4	13.21	6.38	**17.44**	0.055	38.45	-21.01	**19.59**	0.091	40.61	-21.02
836.50	3	256-QAM	V	133	66	8 / 4	12.31	6.38	**16.54**	**0.045**	38.45	-21.91	**18.69**	**0.074**	40.61	-21.92
826.50	5	QPSK	V	142	90	12 / 6	15.32	6.37	19.55	0.090	38.45	-18.90	21.70	0.148	40.61	-18.91
836.50	5	QPSK	V	134	71	12 / 6	15.81	6.38	**20.04**	0.101	38.45	-18.41	**22.19**	0.165	40.61	-18.42
846.50	5	QPSK	V	144	81	12 / 6	14.66	6.48	18.99	0.079	38.45	-19.46	21.14	0.130	40.61	-19.46
836.50	5	16-QAM	V	134	71	12 / 6	14.48	6.38	**18.71**	0.074	38.45	-19.74	**20.86**	0.122	40.61	-19.75
836.50	5	64-QAM	V	134	71	12 / 6	12.86	6.38	**17.09**	0.051	38.45	-21.36	**19.24**	0.084	40.61	-21.37
836.50	5	256-QAM	V	144	81	12 / 6	12.16	6.38	**16.39**	**0.044**	38.45	-22.06	**18.54**	**0.071**	40.61	-22.07
829.00	10	QPSK	V	115	80	25 / 12	15.46	6.40	19.71	0.094	38.45	-18.74	21.86	0.153	40.61	-18.75
836.50	10	QPSK	V	142	77	25 / 12	15.79	6.38	**20.02**	0.100	38.45	-18.43	**22.17**	0.165	40.61	-18.44
844.00	10	QPSK	V	135	75	25 / 12	14.68	6.46	18.98	0.079	38.45	-19.47	21.13	0.130	40.61	-19.47
836.50	10	16-QAM	V	142	77	25 / 12	14.59	6.38	**18.82**	0.076	38.45	-19.63	**20.97**	0.125	40.61	-19.64
836.50	10	64-QAM	V	142	77	25 / 12	12.76	6.38	**16.99**	0.050	38.45	-21.46	**19.14**	0.082	40.61	-21.47
836.50	10	256-QAM	V	142	77	25 / 12	12.33	6.38	**16.56**	**0.045**	38.45	-21.89	**18.71**	**0.074**	40.61	-21.90

Table 7-7. ERP Data (Band 5)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1710.70	1.4	QPSK	V	144	328	3 / 2	13.73	9.38	**23.11**	0.205	30.00	-6.89
1745.00	1.4	QPSK	V	165	344	3 / 2	13.87	9.14	23.01	0.200	30.00	-6.99
1779.30	1.4	QPSK	V	144	210	3 / 2	13.76	9.20	22.96	0.198	30.00	-7.04
1710.70	1.4	16-QAM	V	144	328	3 / 2	12.93	9.38	**22.31**	0.170	30.00	-7.69
1710.70	1.4	64-QAM	V	144	328	3 / 2	11.44	9.38	**20.82**	0.121	30.00	-9.18
1710.70	1.4	256-QAM	V	144	328	3 / 2	8.83	9.38	**18.21**	**0.066**	30.00	-11.79
1711.50	3	QPSK	V	164	330	8 / 4	13.72	9.37	23.09	0.204	30.00	-6.91
1745.00	3	QPSK	V	147	63	8 / 4	13.97	9.14	**23.11**	0.205	30.00	-6.89
1778.50	3	QPSK	V	154	35	8 / 4	13.81	9.20	23.01	0.200	30.00	-6.99
1711.50	3	16-QAM	V	164	330	8 / 4	12.90	9.37	**22.27**	0.169	30.00	-7.73
1711.50	3	64-QAM	V	164	330	8 / 4	11.59	9.37	**20.96**	0.125	30.00	-9.04
1711.50	3	256-QAM	V	164	330	8 / 4	8.84	9.37	**18.21**	**0.066**	30.00	-11.79
1712.50	5	QPSK	V	155	32	12 / 6	13.43	9.37	22.80	0.191	30.00	-7.20
1745.00	5	QPSK	V	151	323	12 / 6	13.95	9.14	**23.09**	0.204	30.00	-6.91
1777.50	5	QPSK	V	135	324	12 / 6	13.83	9.19	23.02	0.200	30.00	-6.98
1712.50	5	16-QAM	V	155	32	12 / 6	12.86	9.37	**22.23**	0.167	30.00	-7.77
1712.50	5	64-QAM	V	155	32	12 / 6	11.65	9.37	**21.02**	0.126	30.00	-8.98
1712.50	5	256-QAM	V	155	32	12 / 6	8.65	9.37	**18.02**	**0.063**	30.00	-11.98
1715.00	10	QPSK	V	164	330	25 / 12	13.61	9.35	**22.96**	0.198	30.00	-7.04
1745.00	10	QPSK	V	147	327	25 / 12	13.80	9.14	22.94	0.197	30.00	-7.06
1775.00	10	QPSK	V	165	322	25 / 12	13.71	9.18	22.89	0.195	30.00	-7.11
1715.00	10	16-QAM	V	164	330	25 / 12	12.78	9.35	**22.13**	0.163	30.00	-7.87
1715.00	10	64-QAM	V	164	330	25 / 12	11.63	9.35	**20.98**	0.125	30.00	-9.02
1715.00	10	256-QAM	V	164	330	25 / 12	8.68	9.35	**18.03**	**0.064**	30.00	-11.97
1717.50	15	QPSK	V	164	334	36 / 18	13.73	9.33	23.06	0.202	30.00	-6.94
1745.00	15	QPSK	V	147	327	36 / 18	13.96	9.14	**23.10**	0.204	30.00	-6.90
1772.50	15	QPSK	V	148	241	36 / 18	13.87	9.18	23.05	0.202	30.00	-6.95
1717.50	15	16-QAM	V	164	334	36 / 18	12.94	9.33	**22.27**	0.169	30.00	-7.73
1717.50	15	64-QAM	V	164	334	36 / 18	11.61	9.33	**20.94**	0.124	30.00	-9.06
1717.50	15	256-QAM	V	164	334	36 / 18	8.97	9.33	**18.30**	**0.068**	30.00	-11.70
1720.00	20	QPSK	V	159	328	50 / 25	13.97	9.31	**23.28**	**0.213**	30.00	-6.72
1745.00	20	QPSK	V	144	341	1 / 99	13.37	9.14	22.51	0.178	30.00	-7.49
1770.00	20	QPSK	V	144	342	1 / 0	14.03	9.17	23.20	0.209	30.00	-6.80
1720.00	20	16-QAM	V	159	328	50 / 25	12.93	9.31	**22.24**	0.168	30.00	-7.76
1720.00	20	64-QAM	V	159	328	50 / 25	11.87	9.31	**21.18**	0.131	30.00	-8.82
1720.00	20	256-QAM	V	159	328	50 / 25	10.21	9.31	**19.52**	**0.090**	30.00	-10.48
1720.00	20	QPSK	H	104	37	50 / 25	10.82	9.14	19.96	0.099	30.00	-10.04
1720.00	20 (WCP)	QPSK	H	114	24	50 / 25	10.50	9.14	19.64	0.092	30.00	-10.36

Table 7-8. EIRP Data (Band 66/4)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	EUT Pol.	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
20 MHz	π/2 BPSK	1720.0	H	X	171	211	9.31	1 / 50	12.78	22.09	0.162	30.00	-7.91
		1745.0	H	X	177	219	9.31	1 / 50	12.85	**22.16**	0.164	30.00	-7.84
		1770.0	H	X	162	227	9.31	1 / 50	12.69	22.00	0.158	30.00	-8.00
	QPSK	1720.0	H	X	171	211	9.31	1 / 50	12.23	21.54	0.143	30.00	-8.46
		1745.0	H	X	177	219	9.31	1 / 50	12.33	**21.64**	0.146	30.00	-8.36
		1770.0	H	X	162	227	9.31	1 / 50	12.16	21.47	0.140	30.00	-8.53
	16-QAM	1745.0	H	X	177	219	9.31	1 / 50	11.13	**20.44**	0.111	30.00	-9.56
	64-QAM	1745.0	H	X	177	219	9.31	1 / 50	9.98	**19.29**	0.085	30.00	-10.71
	256-QAM	1745.0	H	X	177	219	9.31	1 / 50	7.97	**17.28**	0.053	30.00	-12.72
15 MHz	π/2 BPSK	1717.5	H	X	165	22	9.31	1/49	12.93	22.24	0.167	30.00	-7.76
		1745.0	H	X	164	34	9.31	1/49	12.88	22.19	0.166	30.00	-7.81
		1772.5	H	X	152	254	9.31	1/49	12.94	**22.25**	0.168	30.00	-7.75
	QPSK	1717.5	H	X	165	22	9.31	1/49	12.48	**21.79**	0.151	30.00	-8.21
		1745.0	H	X	164	34	9.31	1/49	12.40	21.71	0.148	30.00	-8.29
		1772.5	H	X	152	254	9.31	1/49	12.41	21.72	0.149	30.00	-8.28
	16-QAM	1745.0	H	X	164	34	9.31	1/49	11.26	**20.57**	0.114	30.00	-9.43
	64-QAM	1745.0	H	X	164	34	9.31	1/49	11.40	**20.71**	0.118	30.00	-9.29
	256-QAM	1745.0	H	X	164	34	9.31	1/49	10.03	**19.34**	0.086	30.00	-10.66
10 MHz	π/2 BPSK	1715.0	H	X	145	124	9.31	1/0	12.91	22.22	0.167	30.00	-7.78
		1745.0	H	X	148	134	9.31	1/0	13.02	22.33	0.171	30.00	-7.67
		1775.0	H	X	135	137	9.31	1/0	13.05	**22.36**	0.172	30.00	-7.64
	QPSK	1715.0	H	X	145	124	9.31	1/0	12.41	21.72	0.149	30.00	-8.28
		1745.0	H	X	148	134	9.31	1/0	12.46	**21.77**	0.150	30.00	-8.23
		1775.0	H	X	135	137	9.31	1/0	12.37	21.68	0.147	30.00	-8.32
	16-QAM	1745.0	H	X	148	134	9.31	1/0	11.15	**20.46**	0.111	30.00	-9.54
	64-QAM	1745.0	H	X	148	134	9.31	1/0	11.27	**20.58**	0.114	30.00	-9.42
	256-QAM	1745.0	H	X	148	134	9.31	1/0	10.23	**19.54**	0.090	30.00	-10.46
5 MHz	π/2 BPSK	1712.5	H	X	156	20	9.31	1/0	12.82	22.13	0.163	30.00	-7.87
		1745.0	H	X	157	34	9.31	1/0	12.91	**22.22**	0.167	30.00	-7.78
		1777.5	H	X	124	25	9.31	1/0	12.89	22.20	0.166	30.00	-7.80
	QPSK	1712.5	H	X	156	20	9.31	1/0	12.29	21.60	0.145	30.00	-8.40
		1745.0	H	X	157	34	9.31	1/0	12.36	**21.67**	0.147	30.00	-8.33
		1777.5	H	X	124	25	9.31	1/0	12.31	21.62	0.145	30.00	-8.38
	16-QAM	1745.0	H	X	157	34	9.31	1/0	11.08	**20.39**	0.109	30.00	-9.61
	64-QAM	1745.0	H	X	157	34	9.31	1/0	11.05	**20.36**	0.109	30.00	-9.64
	256-QAM	1745.0	H	X	157	34	9.31	1/0	10.18	19.49	0.089	30.00	-10.51
	QPSK (CP-OFDM)	1745.0	H	X	165	28	9.31	1 / 50	11.78	**21.09**	0.129	30.00	-8.91
	QPSK (Opposite Pol.)	1745.0	V	Y	124	34	9.31	1 / 50	10.53	19.84	0.096	30.00	-10.16

Table 7-9. EIRP Data (Band n66)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1850.70	1.4	QPSK	V	111	247	3 / 2	12.94	9.91	22.85	0.193	33.01	-10.16
1882.50	1.4	QPSK	V	150	340	1 / 5	13.13	10.15	**23.28**	0.213	33.01	-9.73
1914.30	1.4	QPSK	V	135	355	1 / 0	12.47	10.37	22.84	0.192	33.01	-10.18
1882.50	1.4	16-QAM	V	150	340	1 / 5	12.13	10.15	**22.28**	0.169	33.01	-10.73
1882.50	1.4	64-QAM	V	150	340	1 / 5	11.23	10.15	**21.38**	0.137	33.01	-11.63
1882.50	1.4	256-QAM	V	150	340	1 / 5	10.13	10.15	**20.28**	**0.107**	33.01	-12.73
1851.50	3	QPSK	V	134	351	8 / 4	12.94	9.91	22.85	0.193	33.01	-10.16
1882.50	3	QPSK	V	135	340	1 / 14	13.01	10.15	**23.16**	0.207	33.01	-9.85
1913.50	3	QPSK	V	147	323	1 / 0	12.58	10.36	22.94	0.197	33.01	-10.07
1882.50	3	16-QAM	V	135	340	1 / 14	12.13	10.15	**22.28**	0.169	33.01	-10.73
1882.50	3	64-QAM	V	135	340	1 / 14	11.24	10.15	**21.39**	0.138	33.01	-11.62
1882.50	3	256-QAM	V	135	340	1 / 14	10.03	10.15	**20.18**	**0.104**	33.01	-12.83
1852.50	5	QPSK	V	123	225	12 / 6	12.91	9.92	22.83	0.192	33.01	-10.18
1882.50	5	QPSK	V	144	257	1 / 24	13.09	10.15	**23.24**	0.211	33.01	-9.77
1912.50	5	QPSK	V	135	351	1 / 0	12.48	10.36	22.84	0.192	33.01	-10.18
1882.50	5	16-QAM	V	144	257	1 / 24	12.13	10.15	**22.28**	0.169	33.01	-10.73
1882.50	5	64-QAM	V	144	257	1 / 24	10.33	10.15	**20.48**	0.112	33.01	-12.53
1882.50	5	256-QAM	V	144	257	1 / 24	9.13	10.15	**19.28**	**0.085**	33.01	-13.73
1855.00	10	QPSK	V	114	241	25 / 12	12.97	9.94	22.91	0.195	33.01	-10.10
1882.50	10	QPSK	V	132	340	1 / 49	13.03	10.15	**23.18**	0.208	33.01	-9.83
1910.00	10	QPSK	V	123	323	1 / 0	12.48	10.34	22.82	0.191	33.01	-10.19
1882.50	10	16-QAM	V	132	340	1 / 49	12.00	10.15	**22.15**	0.164	33.01	-10.86
1882.50	10	64-QAM	V	132	340	1 / 49	10.91	10.15	**21.06**	0.128	33.01	-11.95
1882.50	10	256-QAM	V	132	340	1 / 49	10.00	10.15	**20.15**	**0.104**	33.01	-12.86
1857.50	15	QPSK	V	124	247	36 / 18	13.02	9.96	22.98	0.199	33.01	-10.03
1882.50	15	QPSK	V	135	355	1 / 74	13.01	10.15	**23.16**	0.207	33.01	-9.85
1907.50	15	QPSK	V	122	350	1 / 0	12.51	10.33	22.84	0.192	33.01	-10.17
1882.50	15	16-QAM	V	135	355	1 / 74	12.00	10.15	**22.15**	0.164	33.01	-10.86
1882.50	15	64-QAM	V	135	355	1 / 74	11.24	10.15	**21.39**	0.138	33.01	-11.62
1882.50	15	256-QAM	V	135	355	1 / 74	9.84	10.15	**19.99**	**0.100**	33.01	-13.02
1860.00	20	QPSK	V	109	346	50 / 25	12.97	9.98	22.95	0.197	33.01	-10.06
1882.50	20	QPSK	V	115	344	1 / 99	13.18	10.15	**23.33**	**0.215**	33.01	-9.68
1905.00	20	QPSK	V	109	350	1 / 0	12.54	10.31	22.85	0.193	33.01	-10.16
1882.50	20	16-QAM	V	115	344	1 / 99	12.21	10.15	**22.36**	0.172	33.01	-10.65
1882.50	20	64-QAM	V	115	344	1 / 99	11.30	10.15	**21.45**	0.140	33.01	-11.56
1882.50	20	256-QAM	V	115	344	1 / 99	10.11	10.15	**20.26**	**0.106**	33.01	-12.75
1882.50	20	QPSK	H	123	360	1 / 99	11.88	10.15	22.03	0.160	33.01	-10.98
1882.50	20 (WCP)	QPSK	H	108	346	1 / 99	10.15	10.15	20.30	0.107	33.01	-12.71

Table 7-10. EIRP Data (Band 25/2)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2307.50	5	QPSK	H	126	158	1/12	12.90	10.33	**23.23**	0.211	23.98	-0.74
2312.50	5	QPSK	H	112	165	1/12	12.73	10.34	23.07	0.203	23.98	-0.91
2307.50	5	16-QAM	H	126	158	1/12	11.92	10.33	**22.25**	0.168	23.98	-1.72
2307.50	5	64-QAM	H	126	158	1/12	10.82	10.33	**21.15**	0.130	23.98	-2.82
2307.50	5	256-QAM	H	126	158	1/12	7.75	10.33	**18.08**	**0.064**	23.98	-5.89
2310.00	10	QPSK	H	111	157	1 / 49	12.97	10.34	**23.31**	**0.214**	23.98	-0.67
2310.00	10	16-QAM	H	111	157	1 / 49	11.96	10.34	22.30	0.170	23.98	-1.68
2310.00	10	64-QAM	H	111	157	1 / 49	10.65	10.34	20.99	0.125	23.98	-2.99
2310.00	10	256-QAM	H	111	157	1 / 49	8.04	10.34	**18.38**	**0.069**	23.98	-5.60
2310.00	10	QPSK	V	118	241	1 / 49	12.28	10.34	22.62	0.183	23.98	-1.36
2310.00	10 (WCP)	QPSK	V	247	119	1 / 49	12.05	10.34	22.39	0.173	23.98	-1.59

Table 7-11. EIRP Data (Band 30)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2502.50	5	QPSK	H	110	55	12 / 6	11.82	9.46	**21.28**	0.134	33.01	-11.73
2535.00	5	QPSK	H	132	52	1 / 0	11.66	9.42	21.08	0.128	33.01	-11.93
2567.50	5	QPSK	H	124	57	12 / 6	10.64	9.48	20.12	0.103	33.01	-12.89
2502.50	5	16-QAM	H	110	55	12 / 6	10.85	9.46	**20.31**	0.107	33.01	-12.70
2502.50	5	64-QAM	H	110	55	12 / 6	9.83	9.46	**19.29**	0.085	33.01	-13.72
2502.50	5	256-QAM	H	110	55	12 / 6	7.72	9.46	**17.18**	**0.052**	33.01	-15.83
2505.00	10	QPSK	H	135	66	25 / 12	11.62	9.45	**21.07**	0.128	33.01	-11.94
2535.00	10	QPSK	H	136	52	1 / 0	11.63	9.42	21.05	0.127	33.01	-11.96
2565.00	10	QPSK	H	157	52	25 / 12	10.62	9.47	20.09	0.102	33.01	-12.92
2505.00	10	16-QAM	H	135	66	25 / 12	10.83	9.45	**20.28**	0.107	33.01	-12.73
2505.00	10	64-QAM	H	135	66	25 / 12	9.84	9.45	**19.29**	0.085	33.01	-13.72
2505.00	10	256-QAM	H	135	66	25 / 12	7.84	9.45	**17.29**	**0.054**	33.01	-15.72
2507.50	15	QPSK	H	132	57	36 / 18	11.82	9.45	**21.27**	0.134	33.01	-11.74
2535.00	15	QPSK	H	122	68	1 / 0	11.46	9.42	20.88	0.123	33.01	-12.13
2562.50	15	QPSK	H	135	70	36 / 18	10.63	9.46	20.09	0.102	33.01	-12.92
2507.50	15	16-QAM	H	132	57	36 / 18	10.86	9.45	**20.31**	0.107	33.01	-12.70
2507.50	15	64-QAM	H	132	57	36 / 18	9.84	9.45	**19.29**	0.085	33.01	-13.72
2535.00	15	256-QAM	H	122	68	36 / 18	7.73	9.42	**17.15**	**0.052**	33.01	-15.86
2510.00	20	QPSK	H	114	31	50 / 25	11.88	9.45	**21.33**	**0.136**	33.01	-11.68
2535.00	20	QPSK	H	101	35	1 / 0	11.56	9.42	20.98	0.125	33.01	-12.03
2560.00	20	QPSK	H	125	33	50 / 25	10.63	9.45	20.08	0.102	33.01	-12.93
2510.00	20	16-QAM	H	114	31	50 / 25	10.87	9.45	**20.32**	0.108	33.01	-12.69
2510.00	20	64-QAM	H	114	31	50 / 25	9.89	9.45	**19.34**	0.086	33.01	-13.67
2510.00	20	256-QAM	H	114	31	50 / 25	8.72	9.45	**18.17**	**0.066**	33.01	-14.84
2510.00	20	QPSK	V	142	82	50 / 25	11.33	9.42	20.75	0.119	33.01	-12.26
2510.00	20 (WCP)	QPSK	H	201	89	50 / 25	10.62	9.42	20.04	0.101	33.01	-12.97

Table 7-12. EIRP Data (Band 7)

Frequency [MHz]	Channel Bandwidth [MHz]	Mod.	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	RB Size/Offset	Substitute Level [dBm]	Ant. Gain [dBi]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
2498.50	5	QPSK	H	157	36	1 / 0	13.61	9.46	**23.07**	0.203	33.01	-9.94
2593.00	5	QPSK	H	144	41	1 / 24	11.17	9.58	20.75	0.119	33.01	-12.26
2687.50	5	QPSK	H	157	45	1 / 0	10.13	9.85	19.98	0.099	33.01	-13.03
2593.00	5	16-QAM	H	144	41	1 / 0	12.57	9.58	**22.15**	0.164	33.01	-10.86
2593.00	5	64-QAM	H	144	41	1 / 0	11.47	9.58	**21.05**	0.127	33.01	-11.96
2593.00	5	256-QAM	H	144	41	1 / 0	9.46	9.58	**19.04**	**0.080**	33.01	-13.97
2501.00	10	QPSK	H	157	36	1 / 0	13.59	9.46	**23.05**	0.202	33.01	-9.96
2593.00	10	QPSK	H	144	41	25 / 12	11.36	9.58	20.94	0.124	33.01	-12.07
2685.00	10	QPSK	H	157	45	1 / 0	10.13	9.85	19.98	0.100	33.01	-13.03
2593.00	10	16-QAM	H	144	41	1 / 0	12.61	9.58	**22.19**	0.166	33.01	-10.82
2593.00	10	64-QAM	H	144	41	1 / 0	11.26	9.58	20.84	0.121	33.01	-12.17
2593.00	10	256-QAM	H	144	41	1 / 0	9.58	9.58	**19.16**	**0.082**	33.01	-13.85
2503.50	15	QPSK	H	157	36	1 / 0	12.70	9.45	**22.15**	0.164	33.01	-10.86
2593.00	15	QPSK	H	144	41	36 / 18	11.35	9.58	20.93	0.124	33.01	-12.08
2682.50	15	QPSK	H	157	45	1 / 0	10.14	9.86	20.00	0.100	33.01	-13.01
2593.00	15	16-QAM	H	144	41	1 / 0	11.87	9.58	21.45	0.140	33.01	-11.56
2593.00	15	64-QAM	H	144	41	1 / 0	10.70	9.58	20.28	0.107	33.01	-12.73
2593.00	15	256-QAM	H	144	41	1 / 0	9.25	9.58	**18.83**	**0.076**	33.01	-14.18
2506.00	20	QPSK	H	157	36	1 / 0	13.71	9.45	**23.16**	**0.207**	33.01	-9.85
2593.00	20	QPSK	H	144	41	50 / 25	11.43	9.58	21.01	0.126	33.01	-12.00
2680.00	20	QPSK	H	157	45	1 / 0	10.17	9.86	20.03	0.101	33.01	-12.98
2593.00	20	16-QAM	H	144	41	50 / 25	10.56	9.58	20.14	0.103	33.01	-12.87
2593.00	20	64-QAM	H	144	41	50 / 25	9.93	9.58	19.51	0.089	33.01	-13.50
2593.00	20	256-QAM	H	144	41	50 / 25	9.37	9.58	**18.95**	**0.079**	33.01	-14.06
20.00	QPSK	H	V	169	55	1 / 0	13.17	9.45	22.62	0.183	33.01	-10.39
20.00	QPSK (WCP)	H	H	201	14	1 / 0	12.58	9.45	22.03	0.160	33.01	-10.98

Table 7-13. EIRP Data (Band 41)

Bandwidth	Mod.	Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Ant. Gain [dBi]	RB Size/Offset	Substitute Level [dBm]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
100 MHz	π/2 BPSK	2546.0	H	134	20	9.43	1 / 0	12.64	22.07	0.161	33.01	-10.94
		2593.0	H	134	20	9.43	1 / 0	12.78	**22.21**	0.166	33.01	-10.80
		2640.0	H	134	20	9.43	1 / 0	11.76	21.19	0.132	33.01	-11.82
	QPSK	2546.0	H	134	20	9.43	1 / 0	11.86	**21.29**	0.135	33.01	-11.72
		2593.0	H	134	20	9.43	1 / 0	10.67	20.10	0.102	33.01	-12.91
		2640.0	H	134	20	9.43	1 / 0	10.53	19.96	0.099	33.01	-13.05
	16-QAM	2593.0	H	134	20	9.43	1 / 0	10.96	**20.39**	0.109	33.01	-12.62
	64-QAM	2593.0	H	134	20	9.43	1 / 0	10.14	**19.57**	0.091	33.01	-13.44
	256-QAM	2593.0	H	134	20	9.43	1 / 0	8.34	**17.77**	0.060	33.01	-15.24
90 MHz	π/2 BPSK	2541.0	H	127	10	9.43	1 / 0	12.38	21.81	0.152	33.01	-11.20
		2593.0	H	127	10	9.43	1 / 0	12.76	**22.19**	0.166	33.01	-10.82
		2645.0	H	127	10	9.43	1 / 0	11.98	21.41	0.138	33.01	-11.60
	QPSK	2541.0	H	127	10	9.43	1 / 0	11.81	**21.24**	0.133	33.01	-11.77
		2593.0	H	127	10	9.43	1 / 0	10.66	20.09	0.102	33.01	-12.92
		2645.0	H	127	10	9.43	1 / 0	10.35	19.78	0.095	33.01	-13.23
	16-QAM	2593.0	H	127	10	9.43	1 / 0	10.63	**20.06**	0.101	33.01	-12.95
	64-QAM	2593.0	H	127	10	9.43	1 / 0	9.75	**19.18**	0.083	33.01	-13.83
	256-QAM	2593.0	H	127	10	9.43	1 / 0	7.97	**17.40**	0.055	33.01	-15.61
80 MHz	π/2 BPSK	2536.0	H	127	20	9.43	1 / 0	12.67	22.10	0.162	33.01	-10.91
		2593.0	H	134	157	9.43	1 / 0	13.06	**22.49**	0.177	33.01	-10.52
		2650.0	H	134	157	9.43	1 / 0	11.98	21.41	0.138	33.01	-11.60
	QPSK	2536.0	H	127	20	9.43	1 / 0	11.81	**21.24**	0.133	33.01	-11.77
		2593.0	H	134	157	9.43	1 / 0	10.61	20.04	0.101	33.01	-12.97
		2650.0	H	134	157	9.43	1 / 0	10.28	19.71	0.094	33.01	-13.30
	16-QAM	2593.0	H	134	157	9.43	1 / 0	10.96	**20.39**	0.109	33.01	-12.62
	64-QAM	2593.0	H	134	157	9.43	1 / 0	10.15	**19.58**	0.091	33.01	-13.43
	256-QAM	2593.0	H	134	157	9.43	1 / 0	8.23	**17.66**	0.058	33.01	-15.35
60 MHz	π/2 BPSK	2526.0	H	127	155	9.43	1 / 0	12.63	**22.06**	0.161	33.01	-10.95
		2593.0	H	127	155	9.43	1 / 0	12.62	22.05	0.160	33.01	-10.96
		2660.0	H	134	155	9.43	1 / 0	11.75	21.18	0.131	33.01	-11.83
	QPSK	2526.0	H	127	155	9.43	1 / 0	11.79	**21.22**	0.132	33.01	-11.79
		2593.0	H	127	155	9.43	1 / 0	10.24	19.67	0.093	33.01	-13.34
		2660.0	H	134	155	9.43	1 / 0	10.34	19.77	0.095	33.01	-13.24
	16-QAM	2593.0	H	127	155	9.43	1 / 0	10.84	**20.27**	0.106	33.01	-12.74
	64-QAM	2593.0	H	127	155	9.43	1 / 0	10.04	**19.47**	0.089	33.01	-13.54
	256-QAM	2593.0	H	127	155	9.43	1 / 0	8.22	**17.65**	0.058	33.01	-15.36
50 MHz	π/2 BPSK	2521.0	H	147	257	9.43	1 / 0	12.51	21.94	0.156	33.01	-11.07
		2593.0	H	147	257	9.43	1 / 0	12.62	**22.05**	0.160	33.01	-10.96
		2665.0	H	147	257	9.43	1 / 0	11.74	21.17	0.131	33.01	-11.84
	QPSK	2521.0	H	147	257	9.43	1 / 0	11.64	**21.07**	0.128	33.01	-11.94
		2593.0	H	147	257	9.43	1 / 0	10.26	19.69	0.093	33.01	-13.32
		2665.0	H	147	257	9.43	1 / 0	10.29	19.72	0.094	33.01	-13.29
	16-QAM	2593.0	H	147	257	9.43	1 / 0	10.94	**20.37**	0.109	33.01	-12.64
	64-QAM	2593.0	H	147	257	9.43	1 / 0	10.04	**19.47**	0.089	33.01	-13.54
	256-QAM	2593.0	H	147	257	9.43	1 / 0	8.29	**17.72**	0.059	33.01	-15.29
40 MHz	π/2 BPSK	2516.0	H	134	244	9.43	1 / 0	12.68	22.11	0.163	33.01	-10.90
		2593.0	H	134	244	9.43	1 / 0	12.99	**22.42**	0.175	33.01	-10.59
		2670.0	H	134	244	9.43	1 / 0	11.77	21.20	0.132	33.01	-11.81
	QPSK	2516.0	H	134	244	9.43	1 / 0	12.03	**21.46**	0.140	33.01	-11.55
		2593.0	H	134	244	9.43	1 / 0	10.53	19.96	0.099	33.01	-13.05
		2670.0	H	134	244	9.43	1 / 0	10.34	19.77	0.095	33.01	-13.24
	16-QAM	2593.0	H	134	244	9.43	1 / 0	11.33	**20.76**	0.119	33.01	-12.25
	64-QAM	2593.0	H	134	244	9.43	1 / 0	10.54	**19.97**	0.099	33.01	-13.04
	256-QAM	2593.0	H	134	244	9.43	1 / 0	8.54	**17.97**	0.063	33.01	-15.04
20 MHz	π/2 BPSK	2506.0	H	142	162	9.43	1 / 0	12.45	21.88	0.154	33.01	-11.13
		2593.0	H	142	162	9.43	1 / 0	12.54	**21.97**	0.157	33.01	-11.04
		2680.0	H	142	162	9.43	1 / 0	11.75	21.18	0.131	33.01	-11.83
	QPSK	2506.0	H	142	162	9.43	1 / 0	11.80	**21.23**	0.133	33.01	-11.78
		2593.0	H	142	162	9.43	1 / 0	10.28	19.71	0.094	33.01	-13.30
		2680.0	H	142	162	9.43	1 / 0	10.40	19.83	0.096	33.01	-13.18
	16-QAM	2593.0	H	142	162	9.43	1 / 0	10.41	**19.84**	0.096	33.01	-13.17
	64-QAM	2593.0	H	142	162	9.43	1 / 0	9.28	**18.71**	0.074	33.01	-14.30
	256-QAM	2593.0	H	142	162	9.43	1 / 0	7.28	**16.71**	0.047	33.01	-16.30
	QPSK (CP-OFDM)	2593.0	H	134	241	9.43	1 / 0	10.75	20.18	0.104	33.01	-12.83
	QPSK (Opposite Pol.)	2593.0	V	149	284	9.43	1 / 0	11.87	21.30	0.135	33.01	-11.71

Table 7-14. EIRP Data (Band n41)

7.7 Radiated Spurious Emissions Measurements

Test Overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI/TIA-603-E-2016 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically and horizontally polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized broadband horn antennas.

Test Procedures Used

KDB 971168 D01 v03r01 – Section 5.8

ANSI/TIA-603-E-2016 – Section 2.2.12

Test Settings

1. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
2. VBW ≥ 3 x RBW
3. Span = 1.5 times the OBW
4. No. of sweep points ≥ 2 x span / RBW
5. Detector = RMS
6. Trace mode = Average (Max Hold for pulsed emissions)
7. The trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

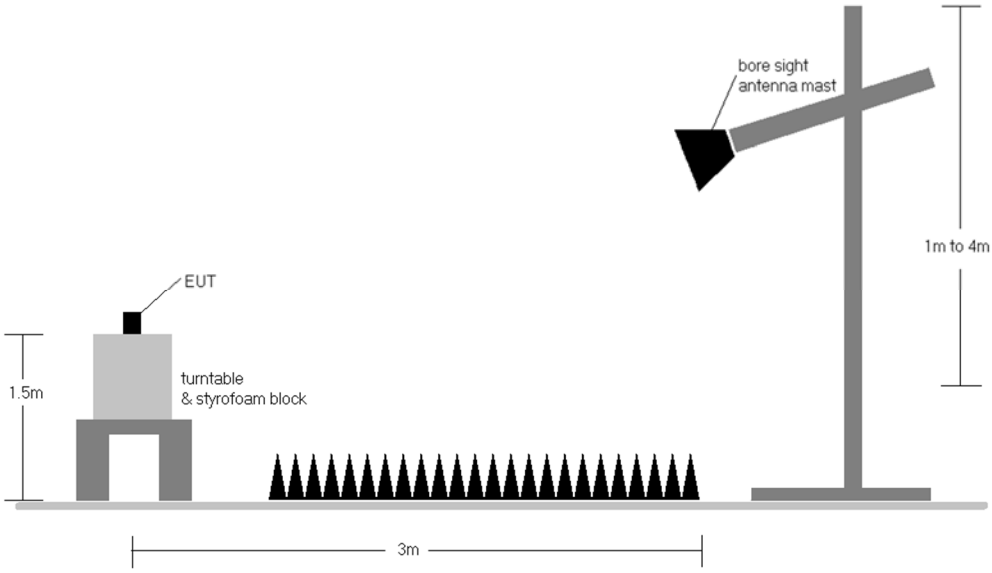


Figure 7-7. Test Instrument & Measurement Setup

Test Notes

1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.

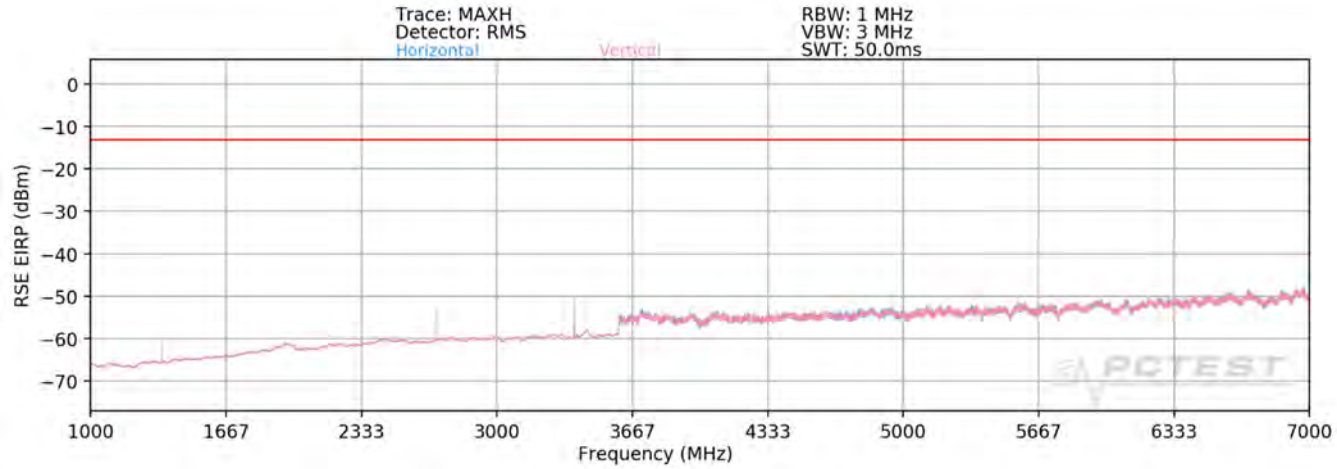
2) This unit was tested with its standard battery.

3) The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter. The worst-case emissions are reported.

4) Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.

5) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

Band 71



Plot 7-538. Radiated Spurious Plot above 1GHz (Band 71)

OPERATING FREQUENCY:	673.00	MHz
CHANNEL:	133222	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1346.00	V	211	183	-68.86	7.92	-60.94	-47.9
2019.00	V	-	-	-76.39	8.86	-67.52	-54.5
2692.00	V	400	175	-59.13	9.63	-49.50	-36.5
3365.00	V	397	141	-57.60	9.48	-48.13	-35.1
4038.00	V	400	225	-64.74	9.62	-55.12	-42.1
4711.00	V	-	-	-74.10	11.46	-62.65	-49.6
5384.00	V	-	-	-72.58	11.18	-61.40	-48.4

Table 7-15. Radiated Spurious Data (Band 71 – Low Channel)

OPERATING FREQUENCY:	680.50	MHz
CHANNEL:	133297	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1361.00	V	121	193	-68.38	7.93	-60.45	-47.5
2041.50	V	-	-	-76.45	8.98	-67.47	-54.5
2722.00	V	400	183	-58.65	9.77	-48.88	-35.9
3402.50	V	400	181	-54.66	9.57	-45.09	-32.1
4083.00	V	383	203	-68.94	9.85	-59.08	-46.1
4763.50	V	-	-	-73.92	11.47	-62.44	-49.4
5444.00	V	-	-	-71.51	11.16	-60.35	-47.4

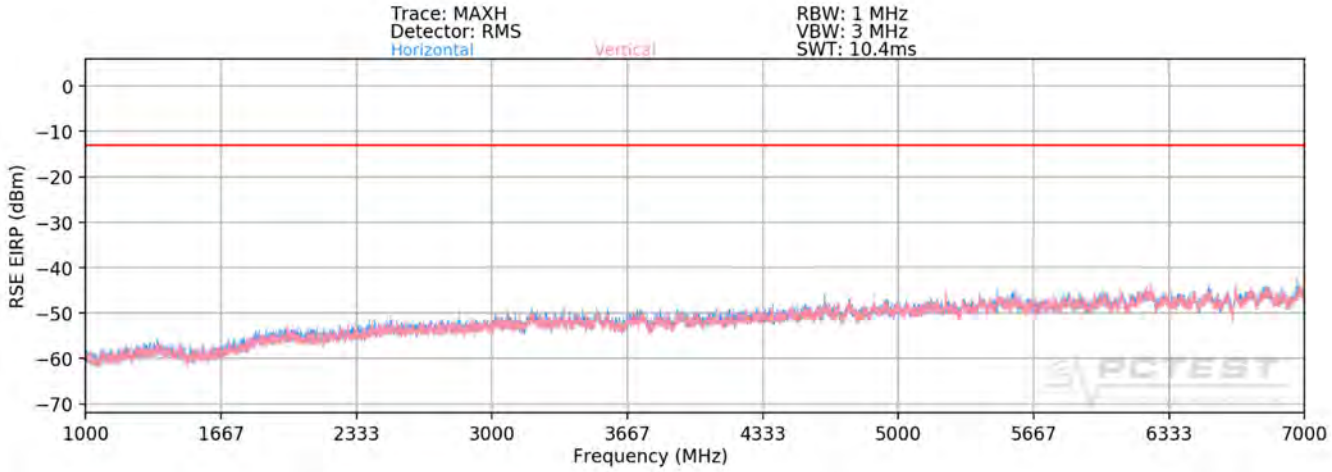
Table 7-16. Radiated Spurious Data (Band 71 – Mid Channel)

OPERATING FREQUENCY:	688.00	MHz
CHANNEL:	133372	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

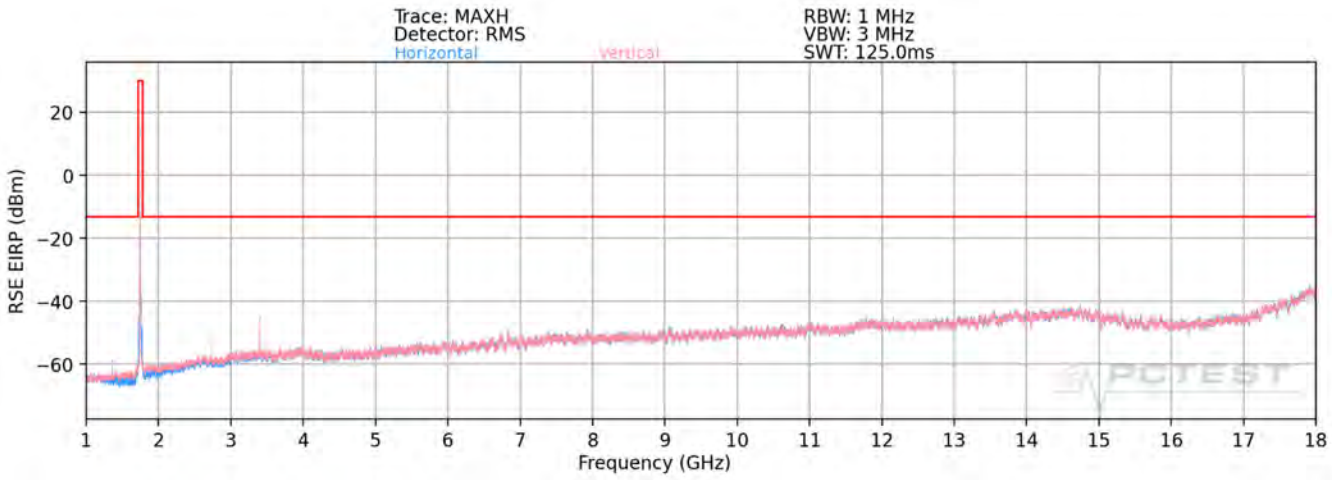
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1376.00	V	111	188	-64.19	7.91	-56.27	-43.3
2064.00	V	156	54	-76.56	9.05	-67.52	-54.5
2752.00	V	400	180	-56.34	9.92	-46.42	-33.4
3440.00	V	400	178	-50.13	9.65	-40.48	-27.5
4128.00	V	400	200	-65.74	10.05	-55.68	-42.7
4816.00	V	299	212	-73.53	11.42	-62.11	-49.1
5504.00	V	-	-	-71.00	11.13	-59.87	-46.9

Table 7-17. Radiated Spurious Data (Band 71 – High Channel)

Band n71



Plot 7-539. Radiated Spurious Plot above 1GHz (n71)



Plot 7-540. Radiated Spurious Plot above 1GHz (n71 + B66)

Bandwidth (MHz):	20
Frequency (MHz):	673.0
RB / Offset:	1 / 50
Mode:	Standalone
Modulation Signal:	QPSK (DFT-s-OFDM)

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1346.0	H	-	-	-72.51	-4.02	30.47	-64.79	-13.00	-51.79
2019.0	H	-	-	-72.42	-2.14	32.44	-62.82	-13.00	-49.82
2692.0	H	-	-	-72.42	-0.19	34.39	-60.87	-13.00	-47.87

Table 7-18. Radiated Spurious Data (n71 – Low Channel)

Bandwidth (MHz):	20
Frequency (MHz):	680.5
RB / Offset:	1 / 50
Mode:	Standalone
Modulation Signal:	QPSK (DFT-s-OFDM)

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1361.0	H	-	-	-72.36	-5.02	29.62	-65.64	-13.00	-52.64
2041.5	H	-	-	-72.37	-1.59	33.04	-62.22	-13.00	-49.22
2722.0	H	-	-	-72.51	-0.31	34.18	-61.07	-13.00	-48.07

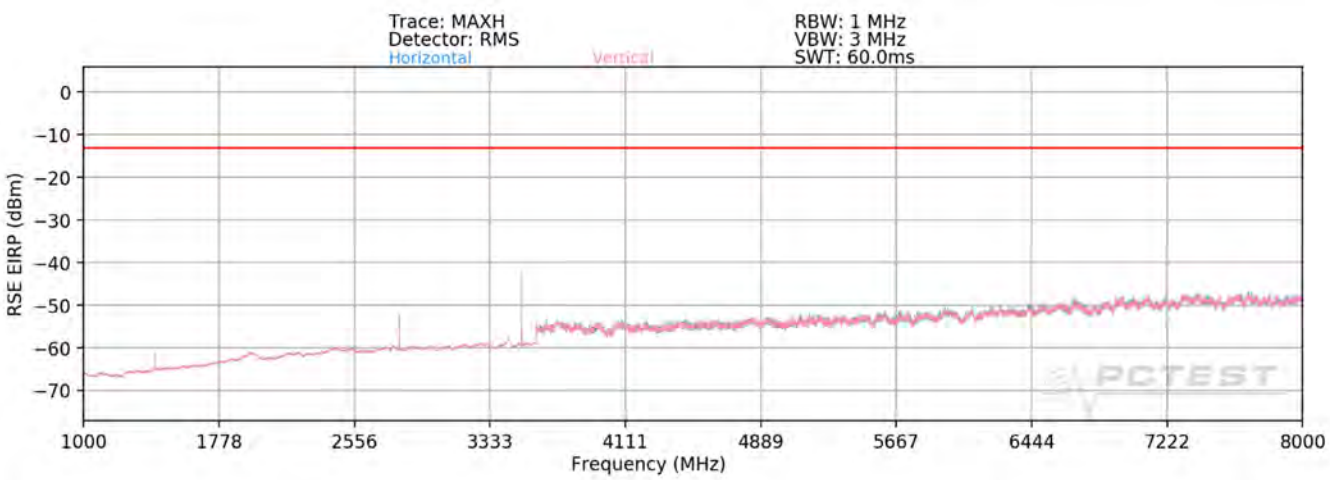
Table 7-19. Radiated Spurious Data (n71 – Mid Channel)

Bandwidth (MHz):	20
Frequency (MHz):	688.0
RB / Offset:	1 / 50
Mode:	Standalone
Modulation Signal:	QPSK (DFT-s-OFDM)

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBµV/m]	EIRP Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
1376.0	H	-	-	-72.41	-3.95	30.64	-64.62	-13.00	-51.62
2064.0	H	-	-	-72.55	-2.30	32.15	-63.11	-13.00	-50.11
2752.0	H	-	-	-73.32	-0.67	33.01	-62.25	-13.00	-49.25

Table 7-20. Radiated Spurious Data (n71 – High Channel)

Band 12



Plot 7-541. Radiated Spurious Plot above 1GHz (Band 12)

OPERATING FREQUENCY:	701.50	MHz
CHANNEL:	23035	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1403.00	V	116	162	-66.95	7.93	-59.03	-46.0
2104.50	V	119	249	-67.62	9.11	-58.51	-45.5
2806.00	V	376	170	-64.55	10.09	-54.46	-41.5
3507.50	V	392	169	-50.69	9.71	-40.97	-28.0
4209.00	V	396	192	-68.19	10.48	-57.71	-44.7
4910.50	V	-	-	-73.72	11.32	-62.40	-49.4

Table 7-21. Radiated Spurious Data (Band 12 – Low Channel)

OPERATING FREQUENCY:	707.50	MHz
CHANNEL:	23095	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1415.00	V	112	161	-69.52	8.09	-61.43	-48.4
2122.50	V	374	256	-72.22	9.11	-63.11	-50.1
2830.00	V	386	176	-61.71	10.14	-51.57	-38.6
3537.50	V	400	170	-49.61	9.76	-39.85	-26.9
4245.00	V	400	1194	-67.96	10.63	-57.34	-44.3

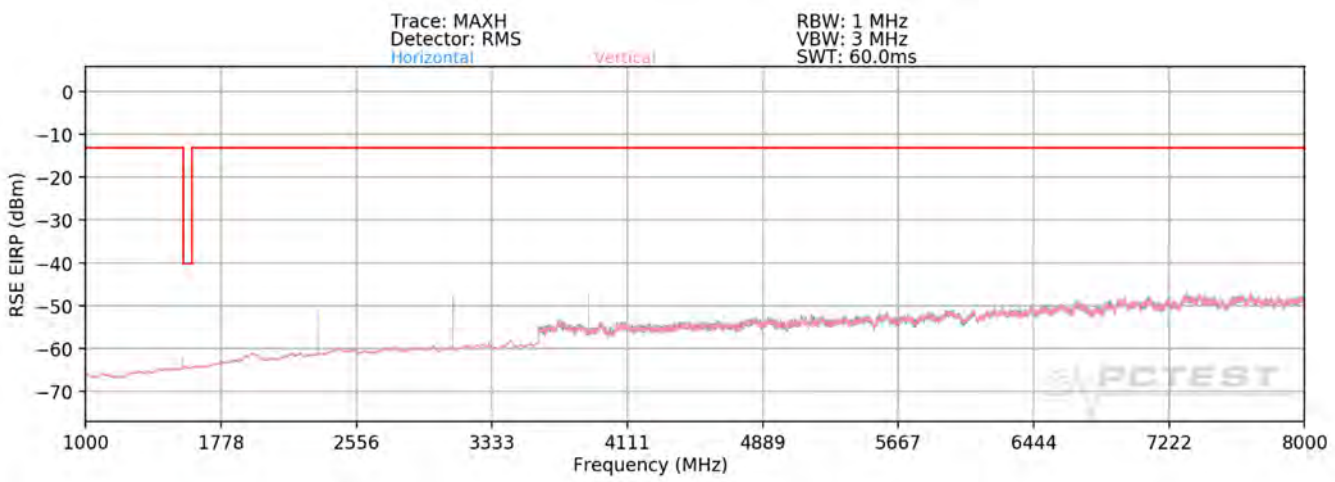
Table 7-22. Radiated Spurious Data (Band 12 – Mid Channel)

OPERATING FREQUENCY:	713.50	MHz
CHANNEL:	23155	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	5.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1427.00	V	113	232	-64.01	8.25	-55.76	-42.8
2140.50	V	111	265	-71.68	9.11	-62.57	-49.6
2854.00	V	400	167	-63.08	10.18	-52.89	-39.9
3567.50	V	380	178	-50.20	9.85	-40.35	-27.4
4281.00	V	392	188	-68.55	10.72	-57.82	-44.8

Table 7-23. Radiated Spurious Data (Band 12 – High Channel)

Band 13



Plot 7-542. Radiated Spurious Plot above 1GHz (Band 13)

OPERATING FREQUENCY:	782.00	MHz
CHANNEL:	23230	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
2346.00	V	111	175	-60.27	9.44	-50.83	-37.8
3128.00	V	400	146	-60.30	9.48	-50.82	-37.8
3910.00	V	400	144	-57.08	9.26	-47.82	-34.8
4692.00	V	400	191	-70.77	11.43	-59.34	-46.3
5474.00	V	-	-	-72.68	11.14	-61.54	-48.5
6256.00	V	-	-	-72.07	11.25	-60.82	-47.8

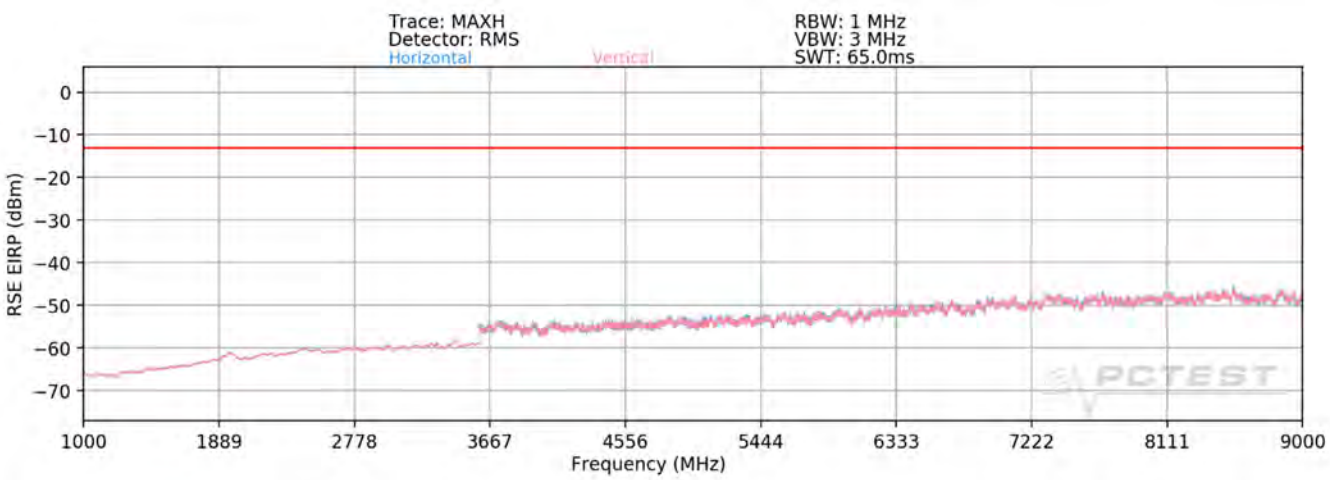
Table 7-24. Radiated Spurious Data (Band 13 – Mid Channel)

MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.00	MHz
DISTANCE:	3	meters
NARROWBAND EMISSION LIMIT:	-50	dBm
WIDEBAND EMISSION LIMIT:	-40	dBm/MHz

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1564.00	V	115	349	-74.46	8.74	-65.72	-25.7

Table 7-25. Radiated Spurious Data (Band 13 – 1559-1610MHz Band)

Band 5



Plot 7-543. Radiated Spurious Plot above 1GHz (Band 5)

OPERATING FREQUENCY:	829.00	MHz
CHANNEL:	26840	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1658.00	V	400	180	-76.97	8.88	-68.09	-55.1
2487.00	V	-	-	-73.88	9.23	-64.66	-51.7

Table 7-26. Radiated Spurious Data (Band 5 – Low Channel)

OPERATING FREQUENCY:	836.50	MHz
CHANNEL:	26915	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1673.00	V	400	79	-76.17	8.78	-67.40	-54.4
2509.50	V	-	-	-72.01	9.27	-62.73	-49.7
3346.00	V	-	-	-60.74	0.00	-60.74	-47.7

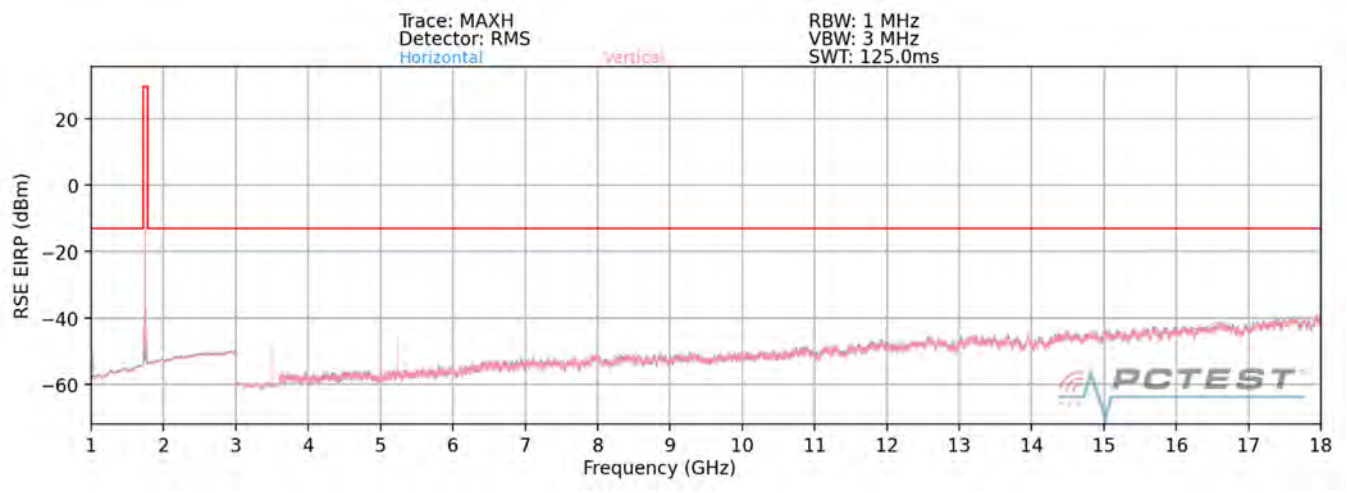
Table 7-27. Radiated Spurious Data (Band 5 – Mid Channel)

OPERATING FREQUENCY:	844.00	MHz
CHANNEL:	26990	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
1688.00	V	365	183	-72.58	8.68	-63.90	-50.9
2532.00	V	-	-	-72.58	9.28	-63.30	-50.3
3376.00	V	-	-	-60.96	0.00	-60.96	-48.0

Table 7-28. Radiated Spurious Data (Band 5 – High Channel)

Band 66/4



Plot 7-544. Radiated Spurious Plot above 1GHz (Band 66/4)

OPERATING FREQUENCY:	1720.00	MHz
CHANNEL:	132072	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3440.00	V	112	152	-62.49	9.65	-52.84	-39.8
5160.00	V	250	184	-56.71	11.03	-45.67	-32.7
6880.00	V	-	-	-66.33	10.99	-55.34	-42.3
8600.00	V	-	-	-64.52	11.77	-52.75	-39.7

Table 7-29. Radiated Spurious Data (Band 66/4 – Low Channel)

OPERATING FREQUENCY:	1745.00	MHz
CHANNEL:	132322	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	V	111	162	-60.87	9.70	-51.17	-38.2
5235.00	V	400	190	-65.20	11.08	-54.11	-41.1
6980.00	V	-	-	-61.42	11.04	-50.37	-37.4
8725.00	V	-	-	-64.18	11.88	-52.29	-39.3

Table 7-30. Radiated Spurious Data (Band 66/4 – Mid Channel)

OPERATING FREQUENCY:	1770.00	MHz
CHANNEL:	132572	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3540.00	V	400	164	-63.95	9.76	-54.18	-41.2
5310.00	V	111	192	-65.95	11.12	-54.83	-41.8

Table 7-31. Radiated Spurious Data (Band 66/4 – High Channel)

NR Band n66

OPERATING FREQUENCY:	1720.00	MHz
MODULATION SIGNAL:	QPSK (DFT-s-OFDM)	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3440.00	H	127	149	-66.45	6.28	-60.17	-47.2
5160.00	H	-	-	-70.31	8.98	-61.33	-48.3
6880.00	H	-	-	-69.32	9.42	-59.90	-46.9
8600.00	H	-	-	-69.24	9.62	-59.62	-46.6

Table 7-32. Radiated Spurious Data (n66 – Low Channel)

OPERATING FREQUENCY:	1745.00	MHz
MODULATION SIGNAL:	QPSK (DFT-s-OFDM)	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3490.00	H	133	141	-68.23	6.47	-61.76	-48.8
5235.00	H	-	-	-70.08	8.97	-61.11	-48.1
6980.00	H	111	162	-67.63	9.23	-58.41	-45.4
8725.00	H	-	-	-67.67	9.59	-58.08	-45.1
10470.00	H	-	-	-64.44	9.43	-55.01	-42.0

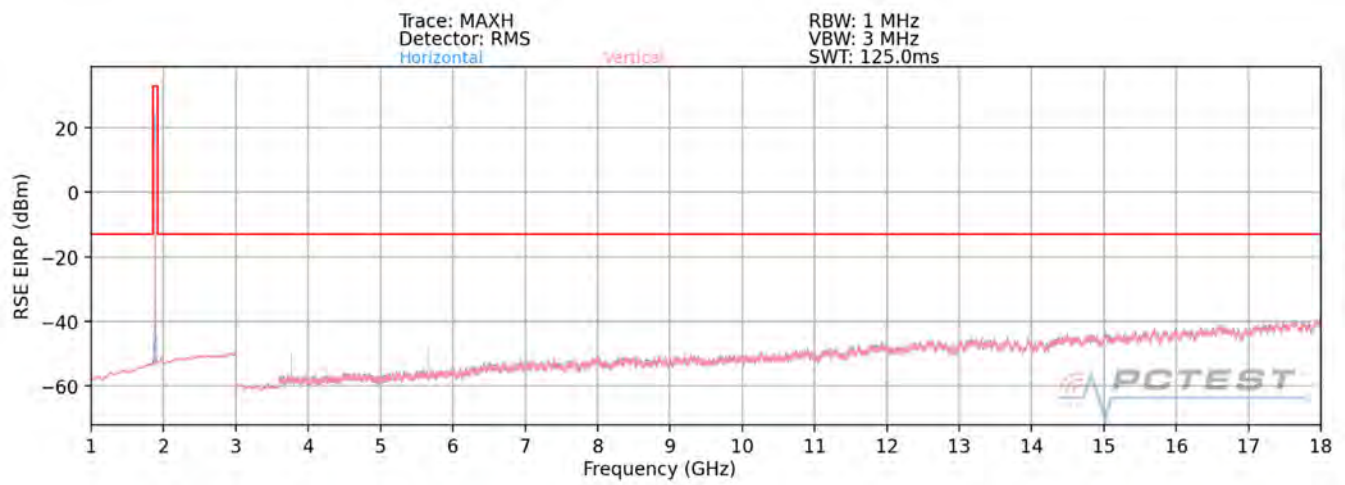
Table 7-33. Radiated Spurious Data (n66 – Mid Channel)

OPERATING FREQUENCY:	1770.00	MHz
MODULATION SIGNAL:	QPSK (DFT-s-OFDM)	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3540.00	H	147	127	-68.23	6.45	-61.78	-48.8
5310.00	H	-	-	-70.33	9.09	-61.24	-48.2
7080.00	H	-	-	-67.71	9.17	-58.54	-45.5
8850.00	H	-	-	-67.71	9.57	-58.14	-45.1

Table 7-34. Radiated Spurious Data (n66 – High Channel)

Band 25/2



Plot 7-545. Radiated Spurious Plot above 1GHz (Band 25/2)

OPERATING FREQUENCY:	1860.00	MHz
CHANNEL:	26140	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3720.00	H	400	212	-54.08	9.77	-44.30	-31.3
5580.00	H	400	196	-58.39	11.21	-47.18	-34.2
7440.00	H	-	-	-65.21	10.94	-54.27	-41.3
9300.00	H	-	-	-64.84	12.37	-52.47	-39.5

Table 7-35. Radiated Spurious Data (Band 25/2 – Low Channel)

OPERATING FREQUENCY:	1882.50	MHz
CHANNEL:	26365	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3765.00	H	400	214	-52.86	9.55	-43.31	-30.3
5647.50	H	398	199	-60.06	11.32	-48.74	-35.7
7530.00	H	-	-	-65.22	11.09	-54.12	-41.1
9412.50	H	-	-	-63.51	12.31	-51.20	-38.2

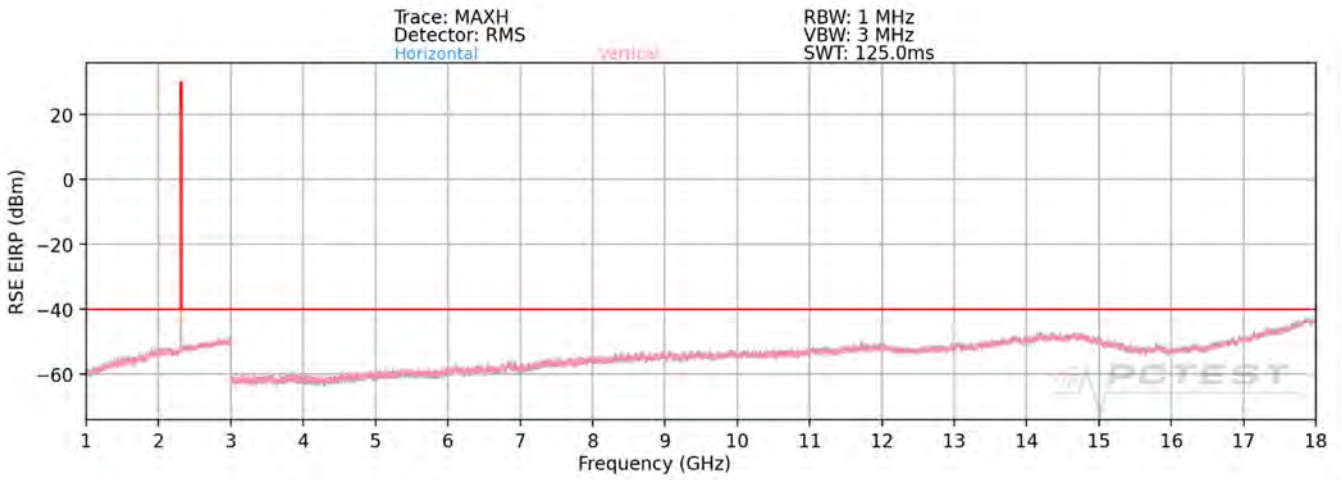
Table 7-36. Radiated Spurious Data (Band 25/2 – Mid Channel)

OPERATING FREQUENCY:	1905.00	MHz
CHANNEL:	26590	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-13	dBm

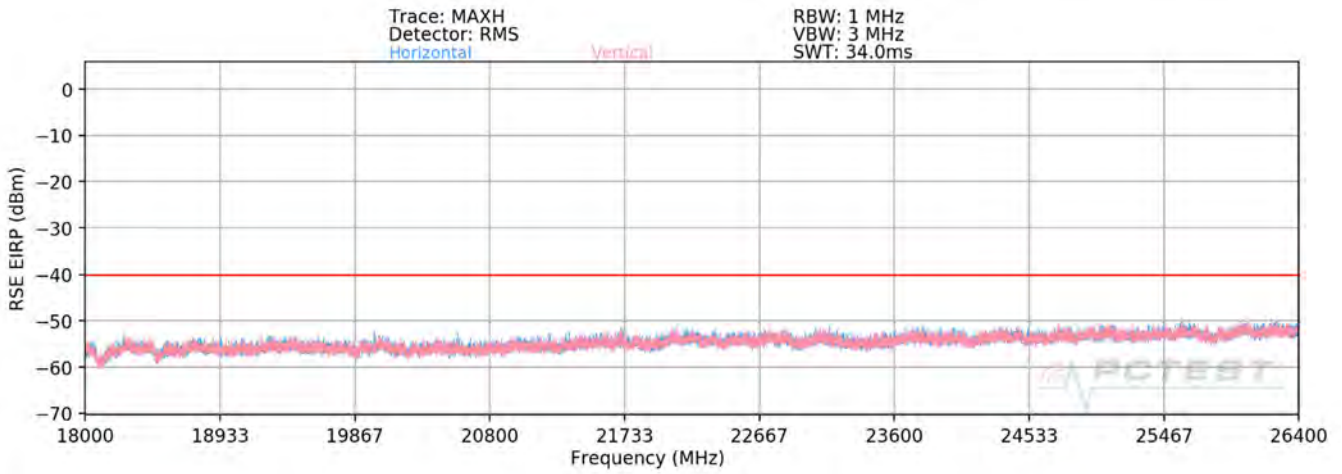
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
3810.00	H	400	224	-52.69	9.29	-43.40	-30.4
5715.00	H	400	191	-59.06	11.39	-47.67	-34.7
7620.00	H	-	-	-66.11	11.31	-54.80	-41.8
9525.00	H	-	-	-64.23	12.38	-51.84	-38.8

Table 7-37. Radiated Spurious Data (Band 25/2 – High Channel)

Band 30



Plot 7-546. Radiated Spurious Plot 1GHz - 18GHz (Band 30)



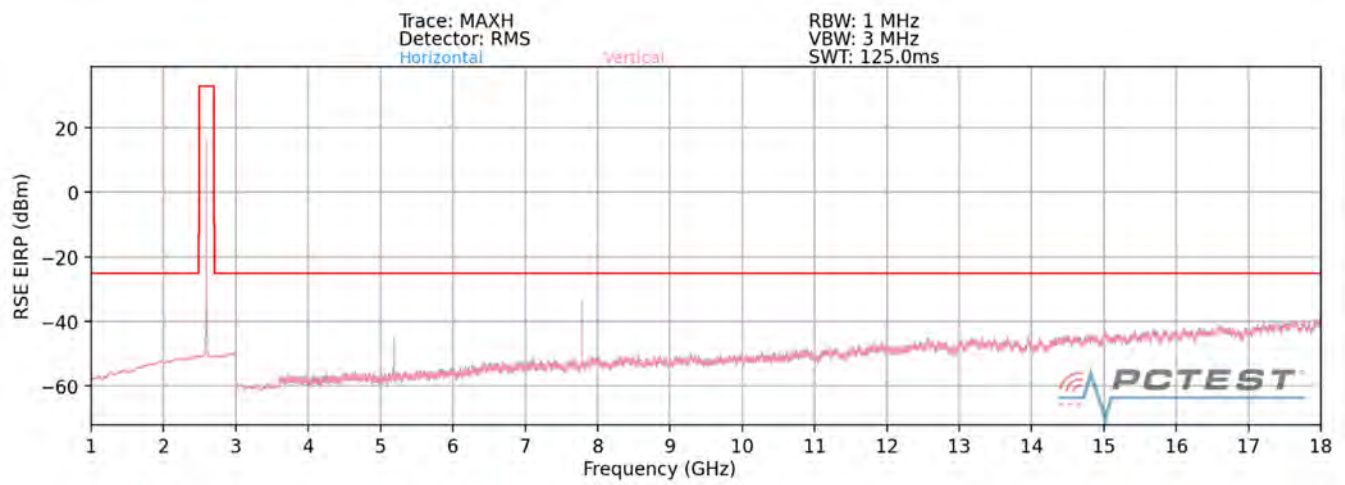
Plot 7-547. Radiated Spurious Plot 18GHz – 26.5GHz (Band 30)

OPERATING FREQUENCY:	2310.00	MHz
CHANNEL:	27710	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	10.0	MHz
DISTANCE:	3	meters
LIMIT:	-40	dBm

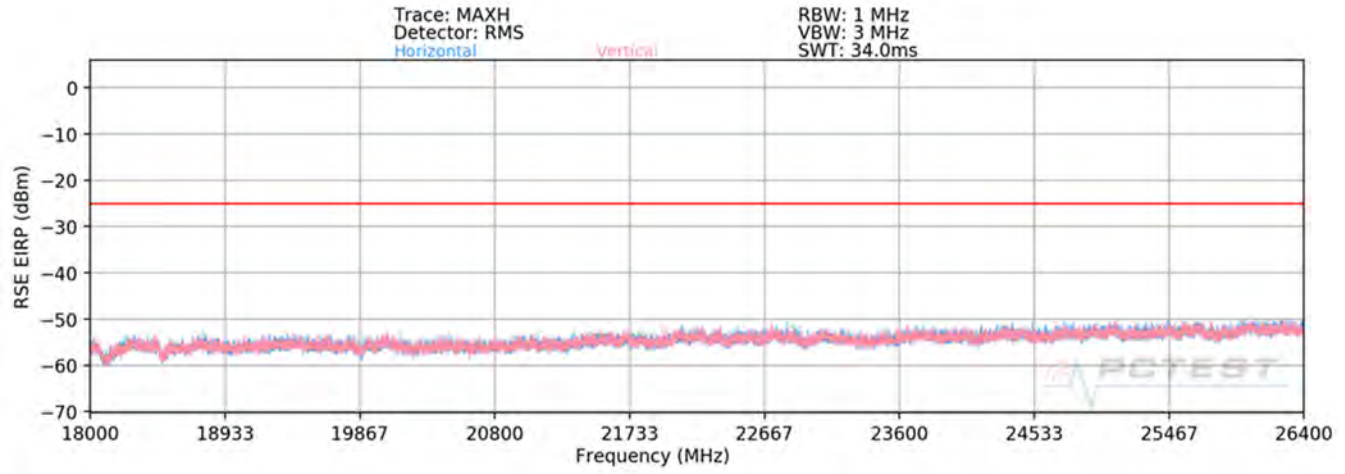
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
4620.00	H	398	263	-69.76	10.95	-58.81	-18.8
6930.00	H	114	48	-66.68	11.77	-54.91	-14.9
9240.00	H	-	-	-63.98	11.65	-52.33	-12.3
11550.00	H	-	-	-62.58	12.76	-49.81	-9.8

Table 7-38. Radiated Spurious Data (Band 30 – Mid Channel)

Band 41



Plot 7-548. Radiated Spurious Plot above 1GHz (Band 41)



Plot 7-549. Radiated Spurious Plot 18GHz – 26.5GHz (Band 41)

OPERATING FREQUENCY:	2506.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5012.00	H	112	251	-62.72	10.94	-51.78	-26.8
7518.00	H	238	178	-56.03	11.13	-44.90	-19.9
10024.00	H	265	119	-67.76	12.03	-55.73	-30.7
12530.00	H	340	188	-73.30	13.60	-59.70	-34.7
15036.00	H	167	197	-73.21	13.53	-59.68	-34.7
17542.00	H	-	-	-53.04	11.75	-41.29	-16.3

Table 7-39. Radiated Spurious Data (Band 41 – Low Channel)

OPERATING FREQUENCY:	2593.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	H	397	227	-55.72	10.77	-44.94	-19.9
7779.00	H	398	173	-43.49	11.47	-32.02	-7.0
10372.00	H	256	232	-55.19	12.48	-42.71	-17.7
12965.00	H	240	205	-56.56	13.34	-43.21	-18.2
15558.00	H	207	262	-61.96	16.37	-45.59	-20.6

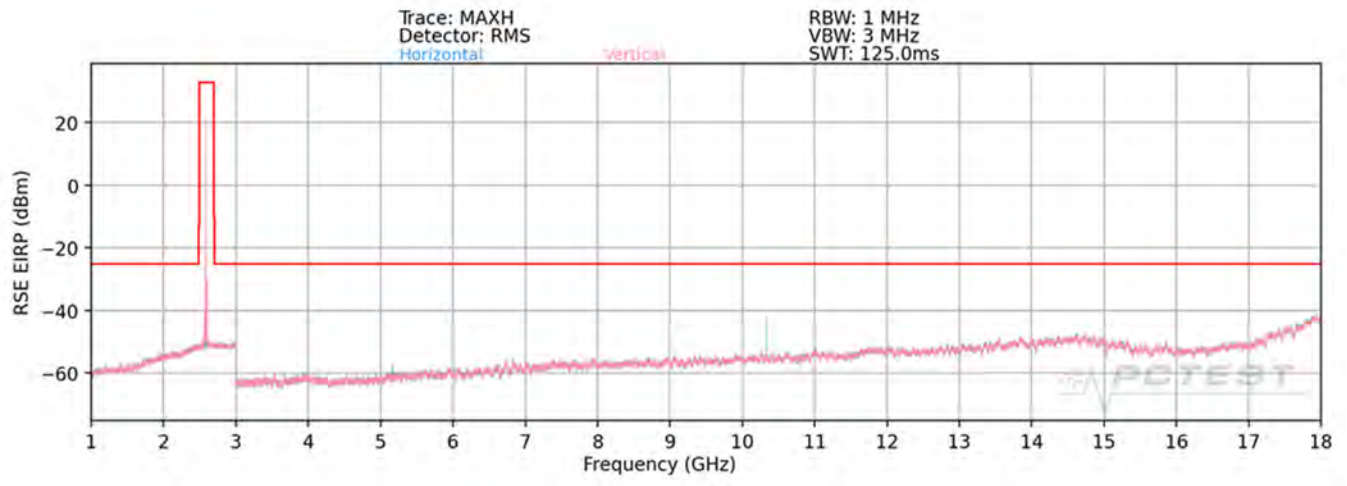
Table 7-40. Radiated Spurious Data (Band 41 – Mid Channel)

OPERATING FREQUENCY:	2680.00	MHz
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	H	400	129	-58.47	10.72	-47.75	-22.8
8040.00	H	243	189	-57.85	11.20	-46.65	-21.7
10720.00	H	255	233	-60.16	12.65	-47.51	-22.5
13400.00	H	190	133	-57.71	12.62	-45.08	-20.1
16080.00	H	-	-	-64.59	16.62	-47.97	-23.0

Table 7-41. Radiated Spurious Data (Band 41 – High Channel)

NR Band n41



Plot 7-550. Radiated Spurious Plot above 1GHz (n41 Standalone)

OPERATING FREQUENCY:	2506.00	MHz
MODULATION SIGNAL:	QPSK (DFT-s-OFDM)	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5012.00	V	395	326	-52.77	11.39	-41.39	-16.4
7517.00	V	-	-	-63.10	11.08	-52.03	-27.0
10022.00	V	308	358	-53.56	12.31	-41.25	-16.3
12527.00	V	-	-	-58.15	12.85	-45.30	-20.3
15032.00	V	-	-	-57.28	12.65	-44.63	-19.6

Table 7-42. Radiated Spurious Data (Band n41 – Low Channel)

OPERATING FREQUENCY:	2593.00	MHz
MODULATION SIGNAL:	QPSK (DFT-s-OFDM)	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5186.00	V	114	321	-56.39	11.02	-45.37	-20.4
7779.00	V	398	279	-63.15	11.49	-51.66	-26.7
10372.00	V	297	15	-57.91	12.66	-45.25	-20.2
12965.00	V	-	-	-59.78	12.44	-47.34	-22.3
15558.00	V	-	-	-61.15	15.04	-46.11	-21.1

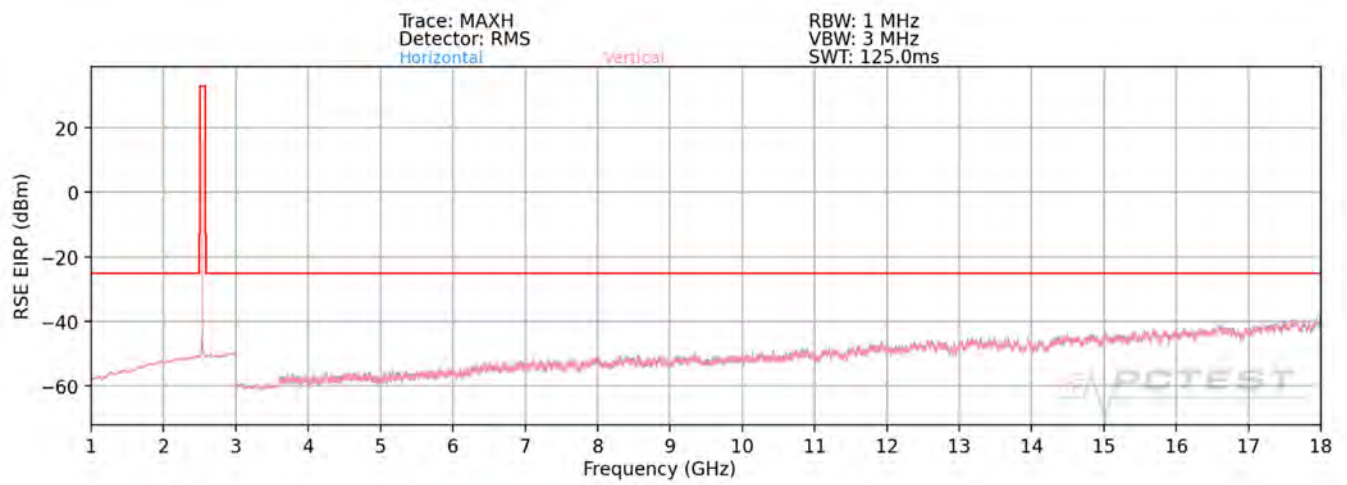
Table 7-43. Radiated Spurious Data (Band n41 – Mid Channel)

OPERATING FREQUENCY:	2680.00	MHz
MODULATION SIGNAL:	QPSK (DFT-s-OFDM)	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

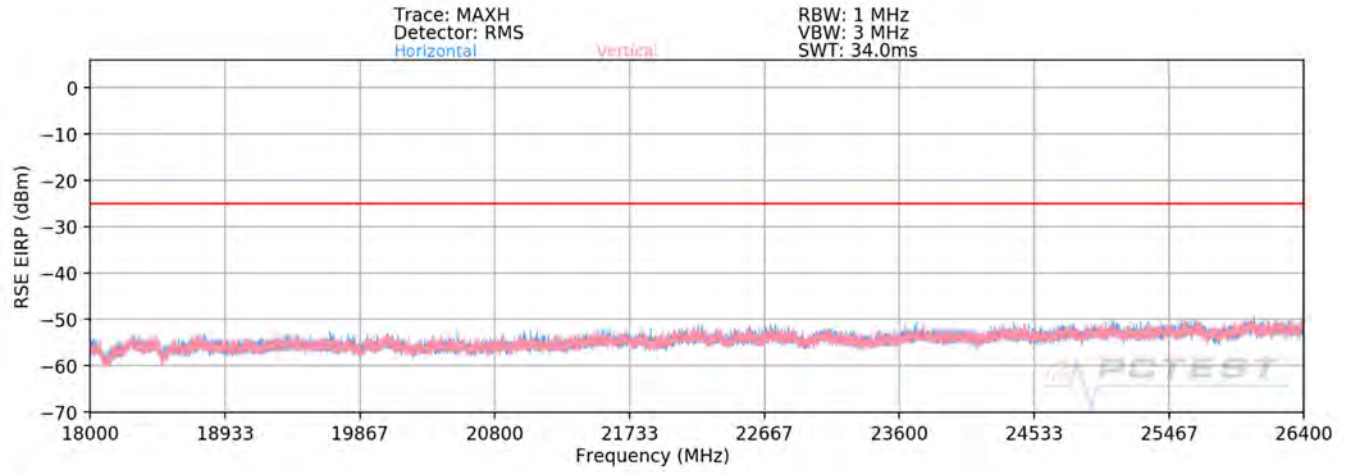
Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5360.00	V	375	350	-66.47	11.15	-55.32	-30.3
8045.00	V	400	8	-57.91	11.41	-46.50	-21.5
10730.00	V	-	-	-63.31	12.92	-50.39	-25.4
13415.00	V	-	-	-58.46	12.13	-46.33	-21.3
16100.00	V	-	-	-61.24	16.15	-45.09	-20.1

Table 7-44. Radiated Spurious Data (Band n41 – High Channel)

Band 7



Plot 7-551. Radiated Spurious Plot above 1GHz (Band 7)



Plot 7-552. Radiated Spurious Plot 18GHz – 26.5GHz (Band 7)

OPERATING FREQUENCY:	2510.00	MHz
CHANNEL:	20850	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5020.00	H	400	322	-69.37	10.91	-58.46	-33.5
7530.00	H	253	111	-63.86	11.16	-52.69	-27.7
10040.00	H	290	201	-62.72	12.03	-50.69	-25.7
12550.00	H	-	-	-62.39	13.61	-48.78	-23.8

Table 7-45. Radiated Spurious Data (Band 7 – Low Channel)

OPERATING FREQUENCY:	2535.00	MHz
CHANNEL:	21100	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5070.00	H	400	156	-67.81	10.78	-57.04	-32.0
7605.00	H	-	-	-64.46	11.28	-53.18	-28.2
10140.00	H	160	260	-61.02	12.12	-48.90	-23.9
12675.00	H	-	-	-62.30	13.72	-48.58	-23.6

Table 7-46. Radiated Spurious Data (Band 7 – Mid Channel)

OPERATING FREQUENCY:	2560.00	MHz
CHANNEL:	21350	
MODULATION SIGNAL:	QPSK	
BANDWIDTH:	20.0	MHz
DISTANCE:	3	meters
LIMIT:	-25	dBm

Frequency [MHz]	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Level at Antenna Terminals [dBm]	Substitute Antenna Gain [dBi]	Spurious Emission Level [dBm]	Margin [dB]
5120.00	H	395	127	-66.93	10.71	-56.22	-31.2
7680.00	H	-	-	-65.47	11.42	-54.05	-29.1
10240.00	H	-	-	-63.98	12.23	-51.76	-26.8

Table 7-47. Radiated Spurious Data (Band 7 – High Channel)

7.8 Frequency Stability / Temperature Variation

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-E-2016. The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

For Part 22, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24, Part 27, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure Used

ANSI/TIA-603-E-2016

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

The EUT was connected via an RF cable to a spectrum analyzer with the EUT placed inside an environmental chamber.

Test Notes

None

Band 71 Frequency Stability Measurements

OPERATING FREQUENCY:	680,500,000	Hz
CHANNEL:	133297	
REFERENCE VOLTAGE:	4.21	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	680,500,048	48	0.0000071
100 %		- 20	680,500,052	52	0.0000076
100 %		- 10	680,500,089	89	0.0000131
100 %		0	680,500,013	13	0.0000019
100 %		+ 10	680,499,854	-146	-0.0000215
100 %		+ 20	680,500,125	125	0.0000184
100 %		+ 30	680,499,926	-74	-0.0000109
100 %		+ 40	680,500,071	71	0.0000104
100 %		+ 50	680,499,966	-34	-0.0000050
BATT. ENDPOINT	2.84	+ 20	680,499,901	-99	-0.0000145

Table 7-48. Frequency Stability Data (Band 71)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 71 Frequency Stability Measurements

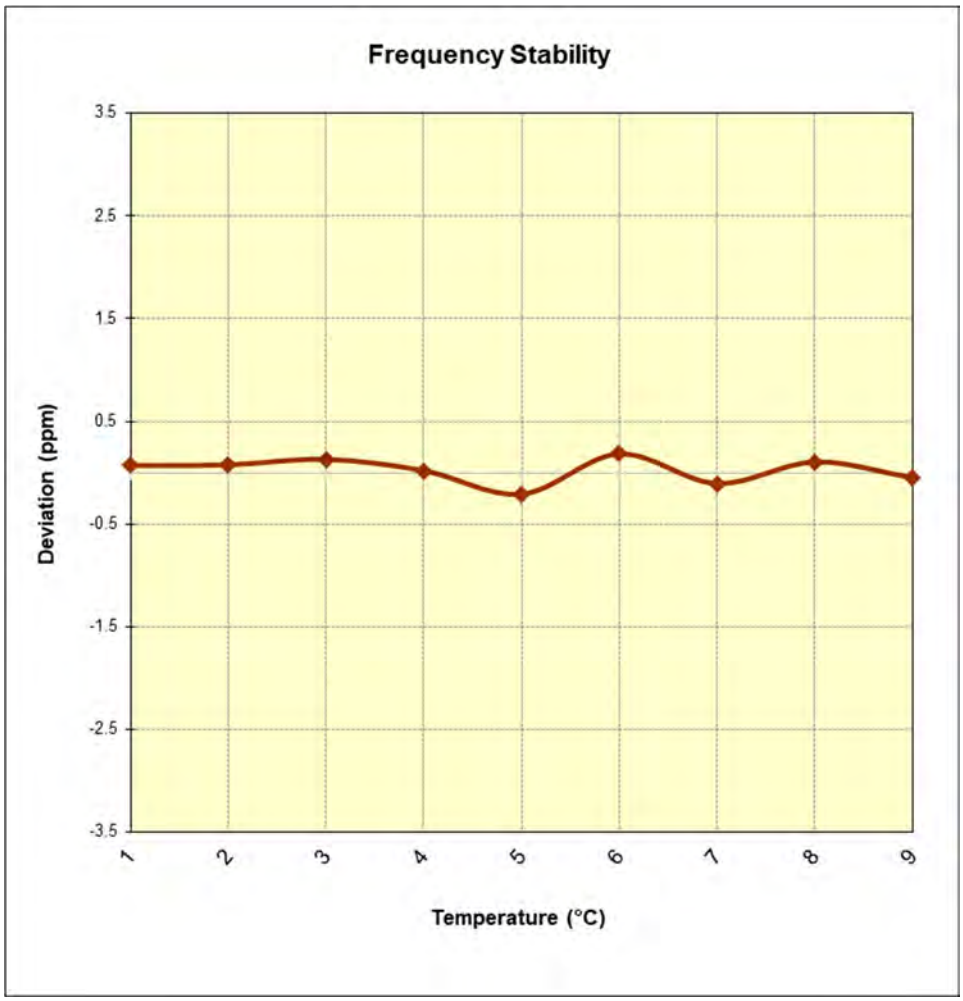


Figure 7-8. Frequency Stability Graph (Band 71)

Band 12 Frequency Stability Measurements

OPERATING FREQUENCY:	707,500,000	Hz
CHANNEL:	23790	
REFERENCE VOLTAGE:	4.21	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	707,499,888	-112	-0.0000158
100 %		- 20	707,500,090	90	0.0000127
100 %		- 10	707,499,885	-115	-0.0000163
100 %		0	707,499,962	-38	-0.0000054
100 %		+ 10	707,500,039	39	0.0000055
100 %		+ 20	707,499,941	-59	-0.0000083
100 %		+ 30	707,500,081	81	0.0000114
100 %		+ 40	707,500,019	19	0.0000027
100 %		+ 50	707,500,041	41	0.0000058
BATT. ENDPOINT	2.84	+ 20	707,499,913	-87	-0.0000123

Table 7-49. Frequency Stability Data (Band 12)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 12 Frequency Stability Measurements

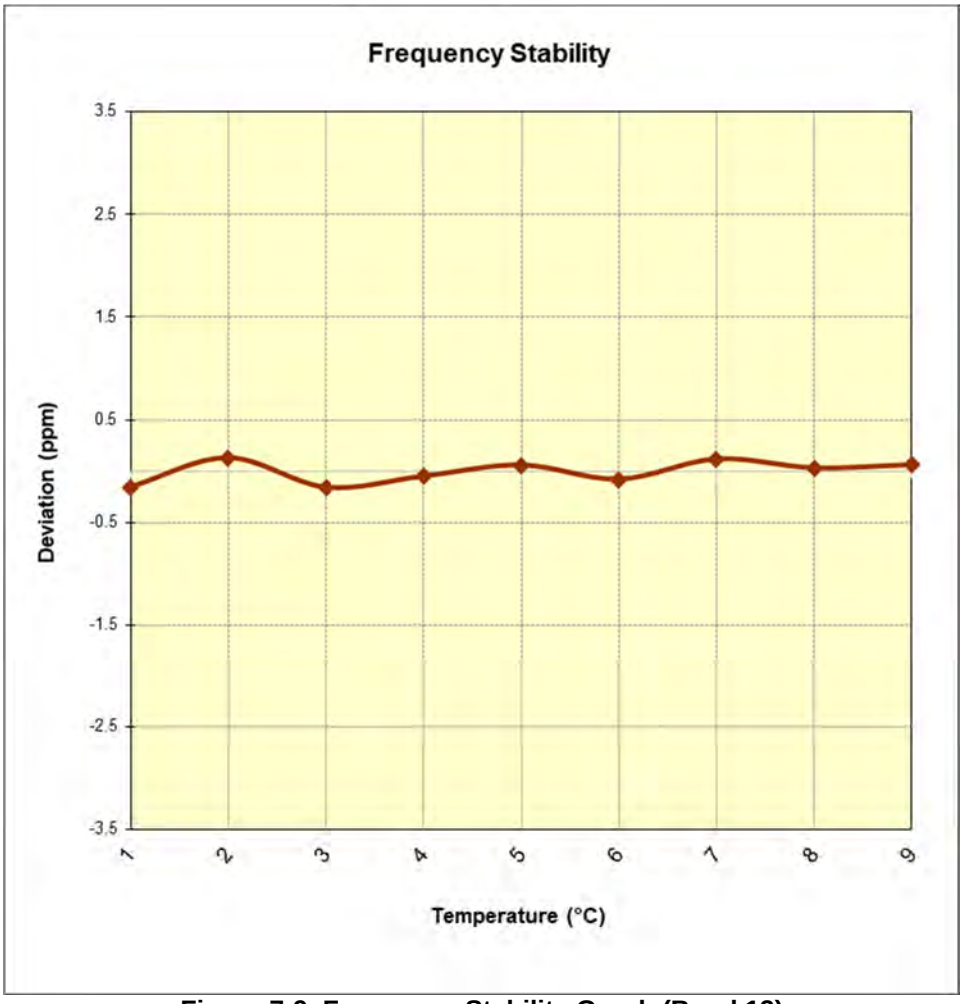


Figure 7-9. Frequency Stability Graph (Band 12)

Band 13 Frequency Stability Measurements

OPERATING FREQUENCY:	782,000,000	Hz
CHANNEL:	23230	
REFERENCE VOLTAGE:	4.21	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	782,000,145	145	0.0000185
100 %		- 20	782,000,057	57	0.0000073
100 %		- 10	781,999,976	-24	-0.0000031
100 %		0	782,000,137	137	0.0000175
100 %		+ 10	782,000,039	39	0.0000050
100 %		+ 20	781,999,956	-44	-0.0000056
100 %		+ 30	782,000,042	42	0.0000054
100 %		+ 40	781,999,887	-113	-0.0000145
100 %		+ 50	782,000,127	127	0.0000162
BATT. ENDPOINT	2.84	+ 20	781,999,961	-39	-0.0000050

Table 7-50. Frequency Stability Data (Band 13)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 13 Frequency Stability Measurements

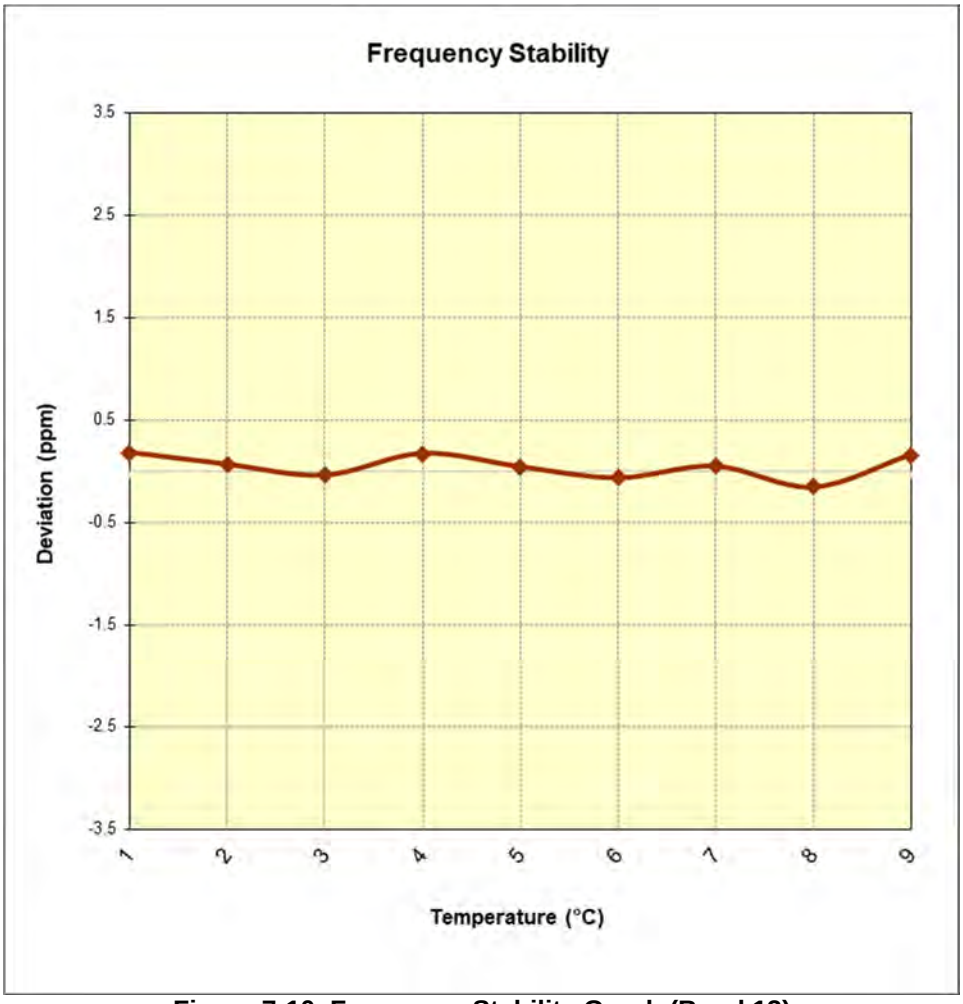


Figure 7-10. Frequency Stability Graph (Band 13)

Band 5 Frequency Stability Measurements

OPERATING FREQUENCY:	831,500,000	Hz
CHANNEL:	26865	
REFERENCE VOLTAGE:	4.21	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	831,499,856	-144	-0.0000173
100 %		- 20	831,499,888	-112	-0.0000135
100 %		- 10	831,499,927	-73	-0.0000088
100 %		0	831,499,972	-28	-0.0000034
100 %		+ 10	831,499,974	-26	-0.0000031
100 %		+ 20	831,500,098	98	0.0000118
100 %		+ 30	831,499,976	-24	-0.0000029
100 %		+ 40	831,500,131	131	0.0000158
100 %		+ 50	831,499,892	-108	-0.0000130
BATT. ENDPOINT	2.84	+ 20	831,500,017	17	0.0000020

Table 7-51. Frequency Stability Data (Band 5)

Band 5 Frequency Stability Measurements

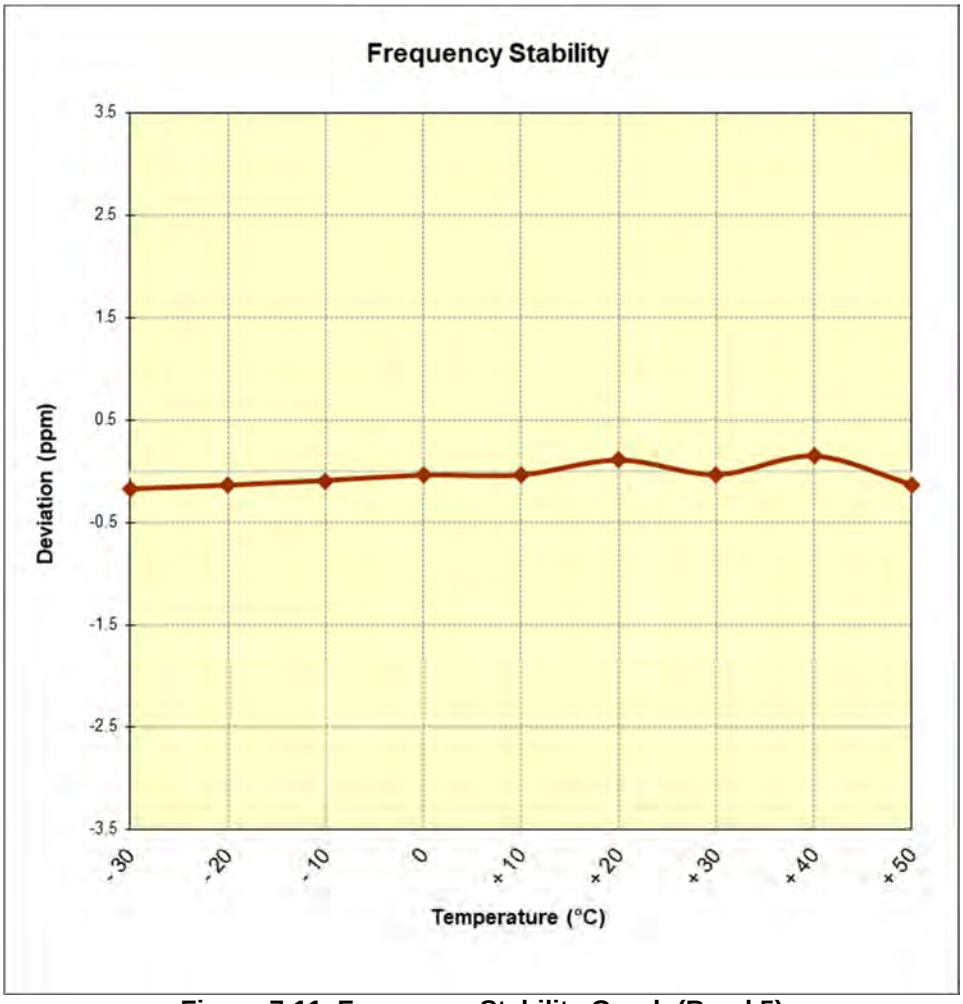


Figure 7-11. Frequency Stability Graph (Band 5)

Band 66/4 Frequency Stability Measurements

OPERATING FREQUENCY:	1,745,000,000	Hz
CHANNEL:	132322	
REFERENCE VOLTAGE:	4.21	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	1,745,000,115	115	0.0000066
100 %		- 20	1,745,000,064	64	0.0000037
100 %		- 10	1,744,999,910	-90	-0.0000052
100 %		0	1,744,999,954	-46	-0.0000026
100 %		+ 10	1,744,999,931	-69	-0.0000040
100 %		+ 20	1,744,999,970	-30	-0.0000017
100 %		+ 30	1,745,000,086	86	0.0000049
100 %		+ 40	1,744,999,866	-134	-0.0000077
100 %		+ 50	1,744,999,937	-63	-0.0000036
BATT. ENDPOINT	2.84	+ 20	1,745,000,052	52	0.0000030

Table 7-52. Frequency Stability Data (Band 66/4)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 66/4 Frequency Stability Measurements

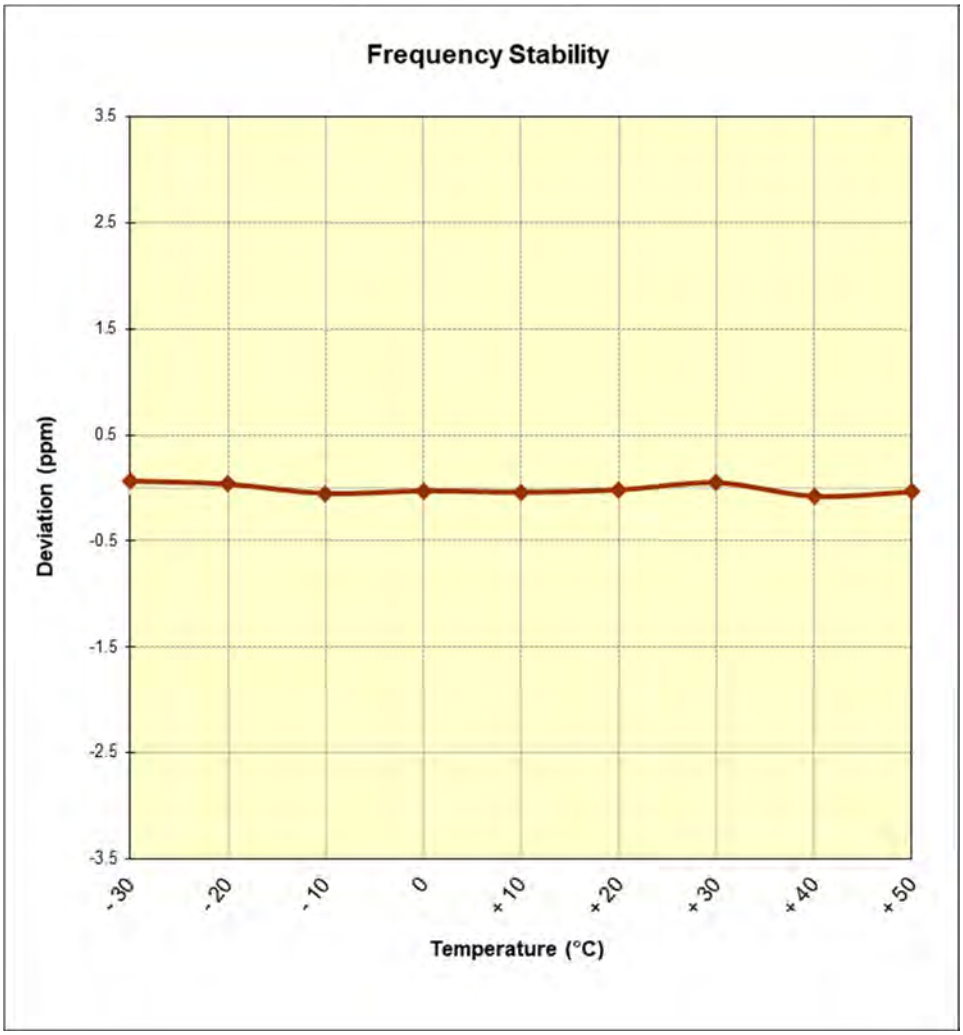


Figure 7-12. Frequency Stability Graph (Band 66/4)

Band 25/2 Frequency Stability Measurements

OPERATING FREQUENCY:	1,882,500,000	Hz
CHANNEL:	26365	
REFERENCE VOLTAGE:	4.21	VDC
DEVIATION LIMIT:	± 0.00025 % or 2.5 ppm	

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	1,882,499,938	-62	-0.0000033
100 %		- 20	1,882,500,084	84	0.0000045
100 %		- 10	1,882,499,903	-97	-0.0000052
100 %		0	1,882,499,952	-48	-0.0000025
100 %		+ 10	1,882,499,924	-76	-0.0000040
100 %		+ 20	1,882,500,143	143	0.0000076
100 %		+ 30	1,882,499,861	-139	-0.0000074
100 %		+ 40	1,882,499,885	-115	-0.0000061
100 %		+ 50	1,882,499,959	-41	-0.0000022
BATT. ENDPOINT	2.84	+ 20	1,882,500,045	45	0.0000024

Table 7-53. Frequency Stability Data (Band 25/2)

Band 25/2 Frequency Stability Measurements

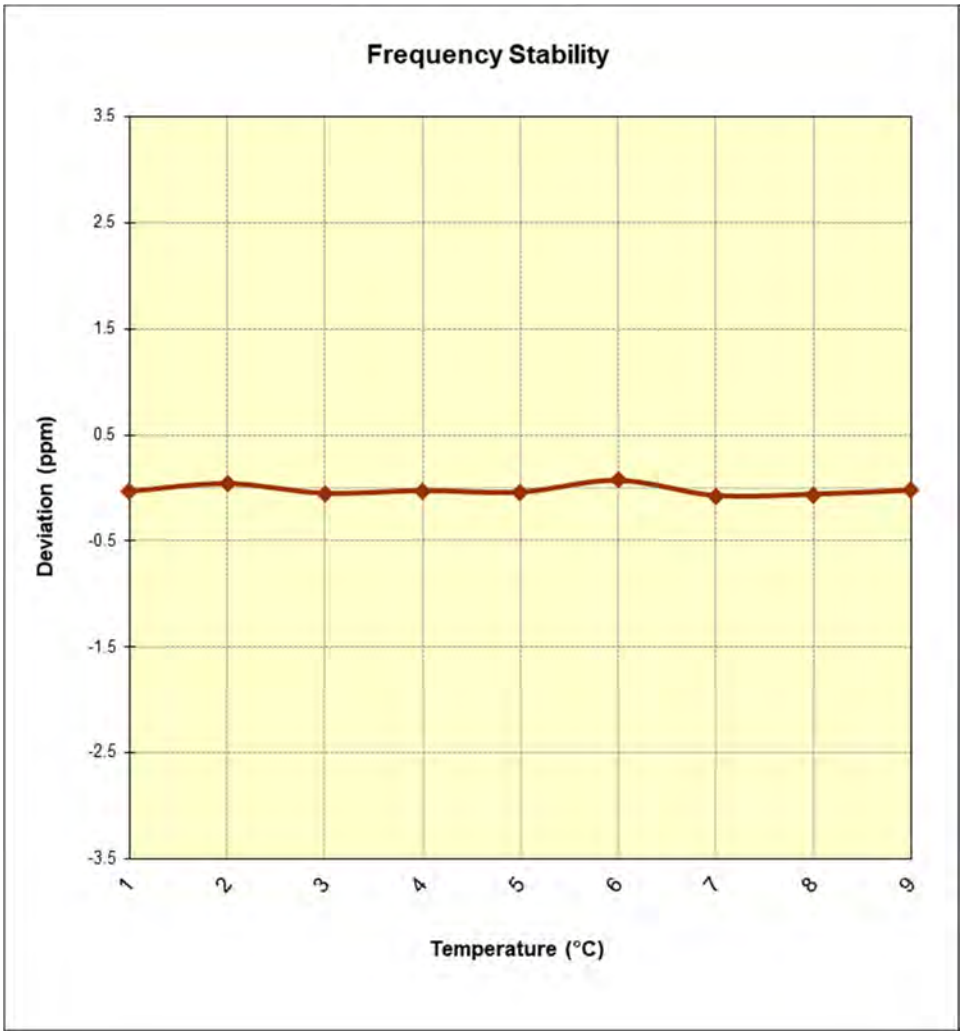


Figure 7-13. Frequency Stability Graph (Band 25/2)

Band 41 Frequency Stability Measurements

OPERATING FREQUENCY:	2,593,000,000	Hz
CHANNEL:	40620	
REFERENCE VOLTAGE:	4.21	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	2,592,999,972	-28	-0.0000011
100 %		- 20	2,593,000,139	139	0.0000054
100 %		- 10	2,592,999,820	-180	-0.0000069
100 %		0	2,593,000,221	221	0.0000085
100 %		+ 10	2,592,999,713	-287	-0.0000111
100 %		+ 20	2,593,000,144	144	0.0000056
100 %		+ 30	2,592,999,898	-102	-0.0000039
100 %		+ 40	2,593,000,143	143	0.0000055
100 %		+ 50	2,593,000,187	187	0.0000072
BATT. ENDPOINT	2.84	+ 20	2,592,999,850	-150	-0.0000058

Table 7-54. Frequency Stability Data (Band 41)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 41 Frequency Stability Measurements

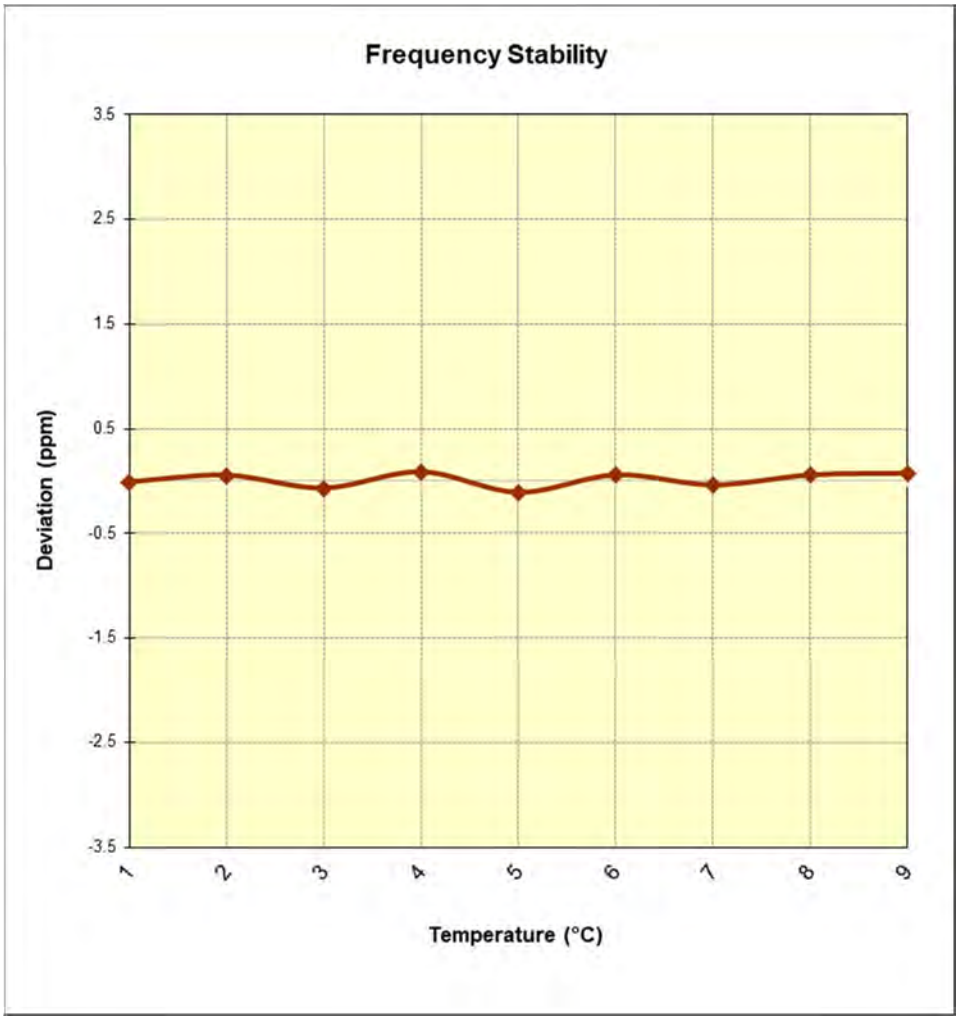


Figure 7-14. Frequency Stability Graph (Band 41)

Band 30 Frequency Stability Measurements

OPERATING FREQUENCY:	2,310,000,000	Hz
CHANNEL:	27710	
REFERENCE VOLTAGE:	4.21	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	2,310,000,134	134	0.0000058
100 %		- 20	2,309,999,967	-33	-0.0000014
100 %		- 10	2,310,000,058	58	0.0000025
100 %		0	2,309,999,958	-42	-0.0000018
100 %		+ 10	2,310,000,146	146	0.0000063
100 %		+ 20	2,310,000,005	5	0.0000002
100 %		+ 30	2,309,999,959	-41	-0.0000018
100 %		+ 40	2,309,999,916	-84	-0.0000036
100 %		+ 50	2,310,000,075	75	0.0000032
BATT. ENDPOINT	2.84	+ 20	2,310,000,136	136	0.0000059

Table 7-55. Frequency Stability Data (Band 30)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 30 Frequency Stability Measurements

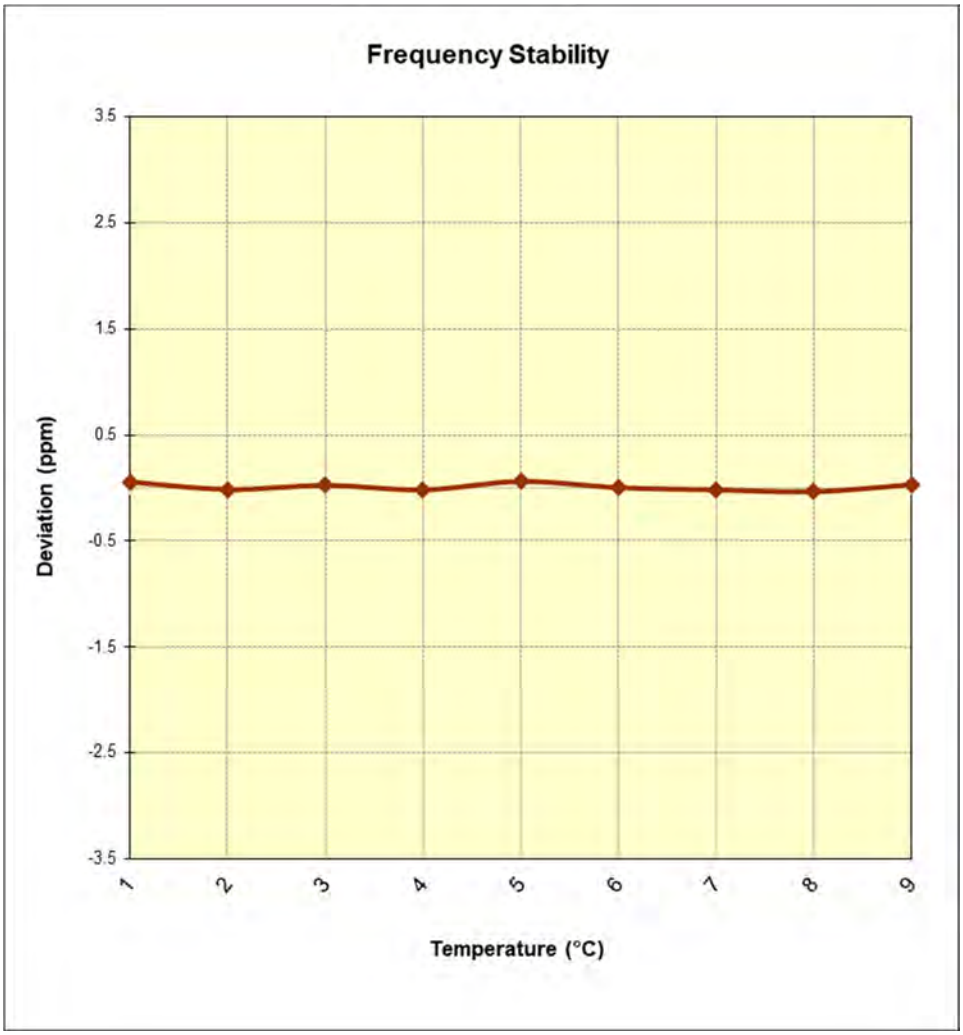


Figure 7-15. Frequency Stability Graph (Band 30)

Band 7 Frequency Stability Measurements

OPERATING FREQUENCY:	2,535,000,000	Hz
CHANNEL:	21100	
REFERENCE VOLTAGE:	4.21	VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	4.21	- 30	2,534,999,939	-61	-0.0000024
100 %		- 20	2,534,999,961	-39	-0.0000015
100 %		- 10	2,534,999,854	-146	-0.0000058
100 %		0	2,534,999,875	-125	-0.0000049
100 %		+ 10	2,535,000,127	127	0.0000050
100 %		+ 20	2,535,000,005	5	0.0000002
100 %		+ 30	2,534,999,869	-131	-0.0000052
100 %		+ 40	2,534,999,857	-143	-0.0000056
100 %		+ 50	2,535,000,053	53	0.0000021
BATT. ENDPOINT	2.84	+ 20	2,535,000,053	53	0.0000021

Table 7-56. Frequency Stability Data (Band 7)

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature and voltage range as tested.

Band 7 Frequency Stability Measurements

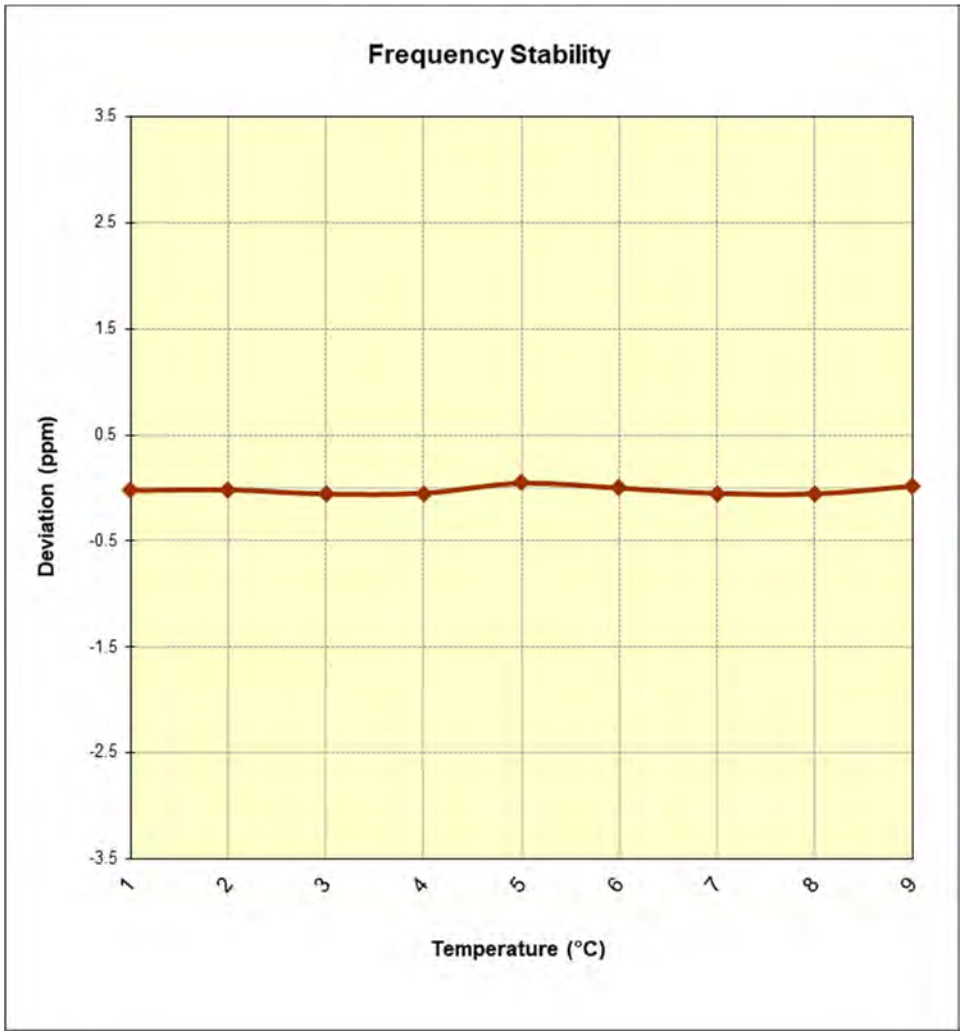


Figure 7-16. Frequency Stability Graph (Band 7)

8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMN981W** complies with all the requirements of Part 22, 24, & 27 of the FCC Rules for LTE operation only.